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Guidance for the Reregistration of Pesticide Products Containing Boric Acid and Boron Containing Salts as the Active Ingredient

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This document contains information regarding the reregistration of pesticide products containing the subject active ingredient. The document includes how to register under a registration standard, regulatory position and rationale, and summaries of data requirements and data gaps. Also included is a bibliography containing citations of all studies reviewed by EPA in arriving at the positions and conclusions contained in the standard.

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GUIDANCE FOR THE REREGISTRATION OF PESTICIDE PRODUCTS CONTAINING BORIC ACID AND BORON CONTAINING SALTS AS THE ACTIVE INGREDIENT

ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDE PROGRAMS

WASHINGTON, D.C. 20460

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TABLE OF CONTENTS

Introduction 1

I. Regulatory Position and Rationale. 4

II. Requirement for Submission of Generic Data 43

III. Requirement for Submission of Product-Specific Data 46

IV. Submission of Revised Labeling 46

A. Label Contents 47

B. Collateral Information 52

V. Instructions for Submission. 53

APPENDICES

		Page
II-1	Guide to Bibliography	56
II-2	Bibliography.	58
II-3	FIFRA §3(c)(2)(B) Summary Sheet - EPA Form 8580-1 . .	62
II-4	Certification of Attempt to Enter Into an Agreement with Other Registrants for Development of Data EPA Form 8580-2.	63
III-1	Product Specific Data Report (End-Use Products) . . .	64
IV-1	40 CFR 162.10 Labeling Requirements	66
IV-2	Table of Labeling Requirements.	71
IV-3	Physical/Chemical Hazards Labeling Statement.	77
IV-4	Storage and Disposal Instructions	78

INTRODUCTION

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA sec. 3(g)) directs EPA to reregister all pesticides as expeditiously as possible.

To carry out this task, EPA has established the Registration Standards program, which will review all pesticide products containing active ingredients first registered before January 1, 1977. Pesticides generally will be reviewed in use clusters which have been ranked to give earliest review to pesticides used on food and feed crops.

The Registration Standards program involves a thorough review of the scientific data base underlying pesticide registrations and an identification of essential but missing studies which may not have been required when the product was initially registered or studies that are now considered insufficient. EPA's reassessment results in the development of a regulatory position, contained in a Registration Standard, on each pesticide and its uses. The Agency may require the registrant provide additional data to support existing registrations, to modify product labels to provide additional precautionary statements, restrict the use of the pesticide to certified applicators, provide reentry intervals, modify uses or formulation types, specify certain packaging limitations, or other requirements to assure that proper use of the pesticide will not result in adverse effects on the environment. The Registration Standard may lead to initiation of a Special Review if it appears that use of the product may cause unreasonable adverse effects on the environment. The Special Review can result in a decision by the Agency to seek a change in the conditions of registration, suspension, or cancellation of the registration.

The scientific review, which is not contained in this Guidance Package but is available upon request, focuses on the technical grade of the active ingredient and identifies missing generic data. However, during the review of these data we are also looking for potential hazards that may be associated with the end use (formulated) products that contain the active ingredient. If we have serious concerns, we will address end use products as part of the Registration Standards program and will propose regulatory actions to the extent necessary to protect the public.

EPA has the authority under FIFRA sec. 3(c)(2)(B) to require registrants to submit data regarding the hazards which may result from the intended use of a pesticide. Although sec. 3(c)(2)(B) provides that all registrants are responsible for these data, the Agency generally imposes generic data requirements only on the registrants of the

manufacturing use products (basic suppliers of the active ingredient) and other producers who do not qualify for the formulator's exemption.*

A producer who does not currently qualify but wishes to qualify for the formulator's exemption may change his source of supply to a registered source, provided the source does not share ownership in common with the registrant's firm. A registrant may do so by submitting a new Confidential Statement of Formula, EPA Form 8570-4, identifying the registered source of the active ingredient, to the appropriate Product Manager within 90 days of receipt of this Guidance Document. The chart on the following page shows what is generally required of those who do and do not qualify for the formulator's exemption in the Registration Standards program.

If you decide to request the Agency to cancel the registration of any of your products subject to the requirements of this Guidance Document, please notify the Product Manager named in the cover letter, within 90 days from the receipt of this document. If you decide to maintain your product registration(s), you must provide the information described in the following pages within the timeframes outlined. EPA may issue a notice of intent to cancel or suspend the registration of any currently registered product which does not comply with the requirements set forth in this Guidance Document.

You are reminded that FIFRA sec. 6(a)(2) requires you to submit factual information raising concerns of possible unreasonable adverse effects of a pesticide. You should notify the Agency of interim results of studies in progress if those results show possible adverse effects.

*The formulator's exemption applies to a registrant of a product if the source of his active ingredient(s): (1) is a registered product and (2) is purchased from a source which does not have ownership in common with the registrant's firm.

PRODUCTS SUBJECT TO THE REGISTRATION STANDARDS PROGRAM	ACTION(S) REQUIRED TO MAINTAIN REGISTRATION
I. Products That Do Not Qualify For The Formulator's Exemption	
A. Single Active Ingredient Products*	These products must be reregistered. To obtain reregistration, labeling, packaging and data requirements must be satisfied in accordance with the Registration Standards Guidance Document.
B. Multiple Active Ingredient Products	These products will not be reregistered at this time. However, generic data required to continue the registration of the active ingredient under review, as described in the Registration Standards Guidance Document, will be required and some labeling precautions may also be required.
II. Products That Do Qualify For The Formulator's Exemption	Only when additional restrictions or labeling are needed to protect man or the environment will these products be subject to the Registration Standard requirements. Affected products will be dealt with in a variety of ways, including but not limited to the Label Improvement Program and special intent to cancel notices.

* End use products of registrants who also produce a manufacturing use product will not be required to be reregistered provided that registrant fulfills the requirements specified in the Guidance Document for manufacturing use product(s). Such end use products will be subject to the labeling changes required for products in "II" above. If there are no manufacturing use products registered by any company end use products will be required to be reregistered.

NOTE: If all registrants in "I" above fail to meet the requirements in I-A and B above, then the registrants in "II" lose their right to qualify for the formulator's exemption and become subject to the requirements in I-A and B.

I. REGULATORY POSITION AND RATIONALE

A. Introduction

This chapter contains the Agency's regulatory position and rationale on products containing the pesticides boric acid, sodium borate decahydrate (borax), and disodium octaborate tetrahydrate as the sole active ingredients. The Agency bases its position and rationale on a consideration of registered uses of pesticide products containing these pesticides under sections 3 and 24(c) of the FIFRA as well as on products authorized for distribution in intrastate commerce under 40 CFR 162.17. The Agency has reviewed the known chemical, environmental, and toxicological characteristics of these pesticides and their established tolerances for residues in or on food and feed commodities. From these considerations the Agency sets forth the data and labeling requirements that must be met by registrants and applicants for registration of manufacturing-use (MP) and end-use (EP) products in order for their products to be registered or reregistered under this Standard.

Only those data and labeling requirements for current and future substantially similar MP's and EP's are addressed here. Applications to register products that differ appreciably from those described in this Standard may be subject to additional data and/or labeling requirements.

Registrants and applicants for registration of EP products containing boric acid for use only for domestic and nondomestic indoor use for cockroach, ant and silverfish control

may be eligible for registration/ reregistration under a simplified procedure and are referred to the General Registration Standard for guidance on registering and reregistering products under this simplified procedure.

B. Description of the Chemicals

Boric acid is the accepted common name for this chemical. Other names are boracic acid and orthoboric acid. Sodium borate decahydrate and disodium octaborate tetrahydrate, respectively, are the accepted chemical names for these substances. Sodium borate decahydrate is also known as borax* or sodium tetraborate decahydrate. Identifying characteristics and codes are as follows:

	BORIC ACID	BORAX	DISODIUM OCTABORATE TETRAHYDRATE
EPA/OPP Chemical Code No.	011001	011102	011103
C.A.S. Registry Number	10043-35-3	001344907	None
Chemical Name	BH_3O_3 or H_3BO_3	$Na_2B_4O_7.10H_2O$	$Na_2B_8O_{13}.4H_2O$
Molecular Weight	61.84	381.39	not a unique compound

Boric acid, borax and disodium octaborate tetrahydrate are physically and chemically similar. Chemistry information on boric acid is provided below:

Color: Colorless transparent crystals, white granules or powder.

*hereafter referred to as borax

Odor: Odorless.
Solubility: In water - 4.8 to 4.92% wt at 20°.
Stability: Stable at ordinary temperatures.
Physical State: Solid at room temperature.
Specific Gravity: 1.5128.
Melting Point: 170.9+ 20 °C.
Vapor Pressure: 2.66 m-bar at 20 °C.
pH: Boric acid in solution has an acidic pH. A 1% solution in water (20° C) has a pH of 5.1.
Storage Stability: Stable.
Flammability: Boric acid is a flame retardant.

Borax is recovered from borate minerals which are found naturally in the United States. Available suppliers of boric acid, borax and disodium octaborate tetrahydrate include the United States Borax and Chemical Corporation, Kerr-McGee Chemical Corporation, and Stauffer Chemical Corporation.

Borax is used as an herbicide on terrestrial noncrop sites such as railroad rights-of-ways, tank farms and industrial sites and as a prepaving treatment under asphalt. It is also registered in combination with other chemicals for ditchbank treatment, and as a preharvest cotton defoliant treatment. Borax is used to control annual and perennial weeds and grasses. It is a nonselective herbicide and is toxic to all classes of vegetation. Fungicidal uses of borax include a citrus fruit dip to control storage mold and a forest tree stump application to control the spread of a woodrotting fungus.

Boric acid, borax and disodium octaborate decahydrate are registered as insecticides for mop, spot, and crack and crevice treatment in residential, industrial, institutional

and commercial buildings and in transportation equipment. Disodium octaborate tetrahydrate is also used to control flies in poultry cages, manure piles, garbage and refuse areas, and freshly sawed green lumber.

C. Regulatory Position and Rationale

Based on a review and evaluation of all available data and other relevant information on boric acid, borax, and disodium octaborate tetrahydrate, the Agency has made the following determinations:

1. All products containing these active ingredients may continue to be registered for sale, distribution, reformulation, and use, subject to the terms and conditions specified in this Guidance Document. Registrants must provide, or agree to develop, additional data, as specified in tables A, B, and C, in order to maintain existing registrations or to permit new registrations.

   Rationale - Under FIFRA, the Agency may choose not to cancel or withhold registration if data are missing or inadequate (see sections 3(c)(2)(B) and 3(c)(7) of the FIFRA). Rather, issuance of this Standard provides a mechanism for identifying data needs. These data will be reviewed and evaluated when they are received and the Agency will determine at that time whether they will affect the registration(s) of these products.

The Agency is requiring data to be submitted in the following areas:

Toxicology: Product-specific toxicity data are required to support each end-use product. The Agency is requiring mutagenicity, and teratology data to fulfill these data gaps. A requirement to generate oncogenicity data is being reserved pending submission and review of a study recently completed by the National Toxicology Program. No toxicological effects of concern have been identified in the data reviewed under this Standard.

Environmental Chemistry: Only limited environmental fate data are required: aerobic soil metabolism, desorption, and aerobic and anaerobic aquatic metabolism studies. No other data are required because of the ubiquitous presence of naturally occuring boron in the environment and a lack of objective data and incidence reports suggesting any environmental problems.

Ecological Effects: A fish embryo larvae and chronic daphnia studies are required to support the railroad right-of-way and drainage ditch uses. Fish warmwater and honeybee acute toxicity studies are also data gaps. Further tests are reserved, pending the outcome of these required tests.

Residue Chemistry: The Agency will consider replacing the tolerances for boron on citrus and cottonseed with tolerance

exemptions and will consider establishing a food additive regulation for boric acid, borax and disodium octaborate tetrahydrate to allow use of these pesticides in food areas of food handling establishments once the Agency has received and reviewed the required toxicity studies. Refer to the discussion under Section G Tolerance Reassessment Summary.

Efficacy: The Agency has data on file that indicate that boric acid products at concentrations below 50 percent perform poorly. The Agency also has data on file indicating poor performance against fleas, ticks, and carpet beetles. Products are also registered for use against grain weevils, drugstore beetles, boxelder bugs, clovermites, elm leaf beetles, and ground beetles. The poor performance of the compound against carpet beetles, fleas and ticks suggests that these additional pests either may not physically pick up a sufficient amount of the dust particles or they may not utilize the cleaning behavior associated with such insects as cockroaches. The Agency also has data on file indicating poor efficacy when the formulation contains greater than one-half percent of silicon dioxide. For these reasons, the Agency is requiring efficacy data to be submitted to support products with formulations or label claims falling in these categories.

2. The Agency is imposing labeling requirements to protect endangered plant species.

Rationale: Since boric acid and borax are phytotoxic, the use of these products on rights-of-way may pose a hazard to certain Federally designated endangered plant species. The Agency is requiring that the user determine that no such species are located in or immediately adjacent to the area to be treated by contacting the Endangered Species Specialist of the appropriate Regional Office of the U.S. Fish and Wildlife Service prior to making an application.

3. The Agency is imposing a label restriction and a limitation on the amount of active ingredient of boric acid in tablet formulations.

Rationale: Despite label precautions, the files of the Pesticide Incident Monitoring System (PIMS) covering the period from 1966 to March, 1979 contain 314 incidents involving boric acid. The majority of these incidents involved children under the age of 5 ingesting tablets. In most cases, the child remained asymptomatic. One fatality was reported in Illinois in April 1972, but the Agency does not have any details or confirmation information on the incident. The Agency considers boric acid tablets to be an "attractive nuisance" to children based on this incident history data.

To mitigate the hazard, the Agency is requiring that each individual tablet contain no more than 125 milligrams of

active ingredient and that the use directions specify not to apply more than 2 tablets per room and to apply only in areas inaccessible to children and pets. The Agency calculates that this would give a ratio (or margin of safety) of 100 between the amount of active ingredient available for consumption and the highest dose level (2.5gr/kg) at which no mortalities were observed in a rat study (GS 0024-027).

Although the Merck Index (10th Edition, 1983) states for boric acid that "Death has occurred from less than 5 gr. in infants and from 5 to 20 gr. in adults", the Agency is basing it position on the rat study (GS 0024-027) in which no mortalities were observed at the highest dose level (2.5 gr/kg). The Agency feels that this study provides more specific information and is, therefore, a more reliable and supportable basis for regulatory decision-making than the information found in the Merck Index.

4. Registrants of all products must submit revised labeling which incorporates the label precautions found in Section F. Rationale - The Agency believes that label statements prescribed in Section F of this Guidance Document should minimize the hazards to humans and hazards to terrestrial and aquatic organisms.

D. Criteria for Registration Under This Standard

To conform to this Standard, products must contain boric acid, borax or disodium octaborate tetrahydrate as the sole active ingredient, bear required labeling, and conform to the product composition, acute toxicity limits, and use pattern requirements listed in section E of this document.

The application for registration or reregistration of manufacturing-use and end-use products subject to this Standard must comply with all terms and conditions described in it, including submission of an up-to-date Confidential Statement of Formula, submission of revised labeling, commitment to fill data gaps on the schedule specified by the Agency and, when applicable, offer to pay compensation as required by 3(c)(1)(D) and 3(c)(2)(D) of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, 7 U.S.C. 136(c)(1)(D) and 136(c)(2)(D).

E. Acceptable Ranges and Limits

Product Composition Standard

To conform to this Standard, all products must contain boric acid, borax, or disodium octaborate tetrahydrate as the sole active ingredient. Each MP or EP formulation proposed for registration must be fully described with an appropriate certification of limits, stating maximum and minimum amounts of the active and intentionally added inert ingredients which will be present in products.

Acute Toxicity Limits

The Agency will consider registration of any MP or EP product, provided that the product labeling bears appropriate precautionary statements for the acute toxicity category in which the product is placed.

Use Patterns

The following use patterns are considered under this Standard:

- Indoor Uses on: mop, spot and crack and crevice treatment in homes, residential, industrial, institutional and commercial buildings and in transportation equipment
- Terrestrial, Non-Food Uses on: railroad rights-of-way, tank farms and industrial sites as a preparing treatment under asphalts; manure piles, garbage and refuse areas
- Terrestrial, Food Uses on: cotton and citrus fruit
- Forestry Uses on: forest tree stumps
- Aquatic Food Uses on: ditchbanks

F. Required Labeling

All manufacturing-use and end-use products must bear appropriate labeling as specified in 40 CFR 162.10. This Standard contains information on label requirements.

Ingredient Statement

The ingredient statement for MP's and EP's must list the active ingredient as boric acid (or orthoboric acid); borax (or sodium borate decahydrate); or disodium octaborate tetrahydrate.

Use Pattern Statement

All manufacturing-use products must state that they are intended for formulation into end-use products for the aforementioned use patterns. Labeling must specify sites, which are listed in Use Patterns, Section E. A limiting factor will be data that support these use patterns. No use may be included on the label where the registrant fails to agree to comply with the data requirements in either table A or table B for that use pattern.

Formulation Type Restrictions

All products in tablet form may contain no more than 125 milligrams of active ingredient per tablet.

Precautionary Statements

Statements for Manufacturing-Use Products

1. Labels for manufacturing-use (MP) products must bear statements reflecting the compound's acute human toxicity. Boric acid, borax, and disodium

octaborate tetrahydrate are in Toxicity Category III by the dermal, inhalation and ocular routes of exposure; required precautionary statements associated with this category are specified in 40 CFR 162.10.

2. The following environmental hazard statement must appear on all MP labels:

> Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or public waters unless this product is specifically identified and addressed in an NPDES permit. Do not discharge effluent containing this product to sewer systems without previously notifying the sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

Statements for End-Use Products

1. The following environmental hazard statement must appear on all end-use products intended for outdoor use:

> Do not apply directly to water. Do not contaminate water by cleaning of equipment or disposal of wastes.

2. For products registered for use on rights-of-ways, the following statement must appear on the label:

> Notice: The use(s) of this product on rights-of-way may pose a hazard to certain Federally designated endangered plant species. They are known to be found in specific areas within the locations noted below. Prior to making applications, the user of this product must determine that no such species are located in or immediately adjacent to the area to be treated. For information on protected species contact the Endangered Species Specialist of the appropriate Regional Office of the U.S. Fish and Wildlife Service listed below:

Region 1-Portland, Oregon

California counties of Contra Costa, Solano, San Diego, Santa Barbara, Ventura, Los Angeles and Orange.
Idaho, Idaho County.
Oregon, Harney County.

Region 2-Albuquerque, New Mexico

Arizona counties of Coconino and Navajo.
New Mexico counties of San Juan, Otero, Chaves, Lincoln, Eddy and Dona Ana.
Texas counties of El Paso, Pecos and Runnels.

Region 3-Twin Cities, Minnesota

Iowa counties of Allamakee, Clayton, and Jackson.

Region 4-Atlanta, Georgia

Florida counties of Clay, Gulf, Gadsden, Franklin and Liberty.
Georgia counties of Wayne and Brantley.
North Carolina, Henderson County.
South Carolina, Greenville County.

Region 5-Newton Corner, Massachusetts

New York, Ulster County.

Region 6-Denver, Colorado

Utah counties of Emery, Piute, Garfield, Washington, Utah and Wayne.
Colorado counties of Montezuma, Delta and Montrose.

3. All insecticide formulations in tablet form must contain the statements below:

Tablets must be spaced so that no more than 2 tablets are placed in a single room. Tablets must be placed in areas inaccessible to children and pets.

G. Tolerance Reassessment Summary

Tolerances currently exist for residues of boron resulting from the fungicidal use of boric acid on citrus and on

cottonseed (3 ppm in or on citrus; 30 ppm in or on cottonseed) as listed in 40 CFR 180.271. Codex maximum residue limits (MRL's) have not been recommended for boron. Tolerances have not been established in Canada or Mexico for residues of boron in any food or feed commodity. The Agency may replace these tolerances with exemptions pending the outcome of the oncogenicity study conducted by the National Toxicology Program (NTP), and review of the required toxicology studies. The reasons are cited below:

Boron occurs naturally in water, fruits, vegetables, and forage crops, and is an essential nutrient for plants. In pears and strawberries the levels may reach 160 ppm, and in red cabbage occasionally as high as 200 to 300 ppm. The increment of added boron residues resulting from pesticide use of boric acid and the boron-containing salts is insignificant compared to levels of naturally occurring boron in citrus and cottonseed. For example, lemons average 1 ppm incremental boron due to treatment, compared with the 2.5 ppm boron which is endogenous. If no toxicological problems of concern are raised by the required data, the Agency may replace the current tolerances of boron in or on raw agricultural commodities with an exemption from the requirement of a tolerance.

Crack and Crevice Treatment

Boric acid and borax are approved for careful crack and crevice use in food areas of food handling establishments

(38 FR 21685, August 10, 1973). The Agency has determined that this use should continue to be allowed, since residues of boric acid and borax are expected to be toxicologically insignificant when used in accordance with label directions prescribed in PR Notices 73-4 and 74-6. The Agency may establish a food additive regulation for boric acid, borax and disodium octaborate decahydrate in accordance with Parts 193 and 561 of Title 21 of the Code of Federal Regulations pending the results of the required toxicology data. This regulation would state that boric acid borax, and disodium octaborate decaydrate may safely be used in accordance with the following condition:

> Application shall be limited solely to careful treatment in food handling establishments where food and food products are held, processed, prepared or served. Contamination of food or food contact surfaces shall be avoided.

TABLE A
GENERIC DATA REQUIREMENTS FOR BORIC ACID, BORAX, AND DISODIUM OCTABORATE TETRAHYDRATE

uideline Citation and ıme of Test	Test Substance	Guidelines Status	Are Data Required? Yes	Are Data Required? No	Footnote Number	Data Must Be Submitted Within Timeframe Listed Below 1/
158.120 Product Chemistry						
Product Identity:						
61-2 - Description of Beginning Materials and Manufacturing Process	TGAI	R	[X]	[ ]	_____	6 Months
61-3 - Discussion of Formation of Impurities	TGAI	R	[X]	[ ]	_____	6 Months
Analysis and Certification of Product Ingredients						
62-1 - Preliminary Analysis	TGAI	CR	[X]	[ ]	_____	12 Months
Physical and Chemical Characteristics						
63-2 - Color	TGAI	R	[X]	[ ]	_____	6 Months
63-3 - Physical State	TGAI	R	[X]	[ ]	_____	6 Months
63-4 - Odor	TGAI	R	[X]	[ ]	_____	6 Months
63-5 - Melting Point	TGAI	R	[X]	[ ]	_____	6 Months
63-6 - Boiling Point	TGAI	R	[ ]	[X]	_____	

TABLE A
GENERIC DATA REQUIREMENTS FOR BORIC ACID, BORAX, AND DISODIUM OCTABORATE TETRAHYDRATE

Guideline Citation and Name of Test	Test Substance	Guidelines Status	Are Data Required? Yes	Are Data Required? No	Footnote Number	Data must Be Submitted Within Timeframe Listed Below 1/
§158.120 Product Chemistry (Continued)						
Physical and Chemical Characteristics (Continued)						
63-7 - Density, Bulk Density, or Specific Gravity	TGAI	R	[X]	[ ]		6 Months
63-8 - Solubility	TGAI or PAI	R	[X]	[ ]		6 Months
63-9 - Vapor Pressure	PAI	R	[X]	[ ]		6 Months
63-10 - Dissociation constant	PAI	R	[X]	[ ]		6 Months
63-11 - Octanol/water partition coefficient	PAI	R	[X]	[ ]		6 Months
63-12 - pH	TGAI	R	[X]	[ ]		6 Months
63-13 - Stability	TGAI	R	[X]	[ ]		6 Months
Other Requirements:						
64- 1 - Submittal of samples	TGAI, PAI	CR	[ ]	[X]		

TGAI = Technical Grade of the Active Ingredient; PAI = Pure Active Ingredient; R = Required; CR = Conditionally Required

1/ Data must be submitted within the indicated timeframe, based on the date of the Guidance Document.

- 6-Month Due Date is April 30, 1986.
- 12-Month Due Date is November 30, 1986.

TABLE A
GENERIC DATA REQUIREMENTS FOR BORAX (DITCHBANK USE ONLY)

Data Requirement	Composition 1/	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframe for Data Submission 2/
§158.125 Residue Chemistry				
171-4 - Nature of Residue (Metabolism)				
- Plants	PAIRA	Yes	005012937 005009091 005008425	No
- Livestock	PAIRA and Plant Metabolites	Yes	005012315	No
171-4 - Residue Analytical Method				
- Plant residues	TGAI and Metabolites	Yes	AOAC 13th Ed (1980) 005007137	No
- Animal residues	TGAI and Metabolites	Yes	AOAC 13th Ed (1980) 005007137	No
- Water residues	TGAI and Metabolites	Yes	AOAC 13th Ed (1980) 005007137	No

TABLE A
GENERIC DATA REQUIREMENTS FOR BORAX (Ditchbank Use Only)

Data Requirement	Composition 1/	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframe for Data Submission 2/
§158.125 Residue Chemistry - Continued				
171-4 - Magnitude of the Residue - Residue Studies for Each Food Use				
- Potable Water	EP	No		Yes 3/ 15 Months
- Fish	EP	No		Yes 3/ 15 Months
- Irrigated Crops	EP	No		Yes 3/ 24 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

§158.125 Residue Chemistry - Continued

1/ Composition: TGAI = Technical grade of the active ingredient; PAIRA = Pure active ingredient, radiolabeled; TEP = Typical end-use product; EP = End-use product.
2/ Data must be submitted within the indicated timeframe, based on the date of the Guidance Document.
° 15 month due date is: February 28, 1987.
° 24 month due date is: November 30, 1987.
3/ Certain limited ditchbank uses such as intermittantly flooded drainage ditches may be considered non-food uses. The registrant has the option of specifying non-food (potable water) use, or submitting residue data upon which the Agency can base an exemption for borax in fish, shellfish and irrigrated crops as a result of the ditchbank use.

TABLE A
GENERIC DATA REQUIREMENTS FOR BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

Data Requirement	Composition 1/	Use Pattern 2/	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframe for Data Submission 3/
§158.130 Environmental Fate					
DEGRADATION STUDIES-LAB:					
161-1 - Hydrolysis	TGAI or PAIRA	A,B,C,G	No	--	No 4/
Photodegradation					
161-2 - In water	TGAI or PAIRA	A,B,C,G		--	No 5/
161-3 - On soil	TGAI or PAIRA	A,B,G		--	No 5/
161-4 - In Air	TGAI or PAIRA	—		--	No 5/
METABOLISM STUDIES-LAB:					
162-1 - Aerobic Soil	TGAI or PAIRA	A,B,G	No	--	Yes 8/ 27 Months
162-2 - Anaerobic Soil	TGAI or PAIRA	--	No	--	No
162-3 - Anaerobic Aquatic	TGAI or PAIRA	C	No	--	Yes 8/ 27 Months
162-4 - Aerobic Aquatic	TGAI or PAIRA	C	No	--	Yes 8/ 27 Months
MOBILITY STUDIES:					
163-1 - Leaching and Adsorption/Desorption	TGAI or PAIRA	A,B,C,G	Partially	05008133	Yes 8/ 12 Months
163-2 - Volatility (Lab)	TEP	—	--	--	No
163-3 - Volatility (Field)	TEP	--	--	--	No

TABLE A
GENERIC DATA REQUIREMENTS FOR BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

ata Requirement	Composition 1/	Use Pattern 2/	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframe for Data Submission 3/
§158.130 Environmental Fate - Continued					
DISSIPATION STUDIES-FIELD:					
164-1 - Soil	TEP	A,B	No	--	Reserved 6/
164-2 - Aquatic (Sediment)	TEP	C	No	--	Reserved 6/
164-3 - Forestry	TEP	G	No	--	Reserved 6/
164-4 - Combination and Tank Mixes		--			
164-5 - Soil, Long-term	TEP	A,B	No	--	No
ACCUMULATION STUDIES:					
165-1 - Rotational Crops (Continued)	PAIRA	--	--	--	No
165-2 - Rotational Crops (Field)	TEP	--	--	--	No
165-3 - Irrigated Crops	TEP	--	--	--	No
165-4 - In Fish	TGAI or PAIRA	A,B,C,G	No	--	No 7/
165-5 - In Aquatic Non-Target Organisms	TEP	B,C,G	No	--	No 7/

TABLE A
GENERIC DATA REQUIREMENTS FOR BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

§158.130 Environmental Fate - Continued

1/ Composition: TGAI = Technical grade of the active ingredient; PAIRA = Pure active ingredient, radiolabeled; TEP Typical end-use product.
2/ The use patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Nonfood; C = Aquatic, Food Crop; D = Aquatic, Nonfood; E = Greenhouse, Food Crop; F = Greenhouse, Nonfood; G = Forestry; H = Domestic Outdoor; I = Indoor.
3/ Data must be submitted within the indicated timeframe, based on the date of the Guidance Document.
- 12-Month Due Date is November 31, 1986.
- 27-Month Due Date is January 31, 1988 .

4/ Waived because compounds are probably resistant to hydrolysis at environmental pH.
5/ Waived because compounds probably are resistant to photolysis.
6/ Reserved, pending results of 162-1, Aerobic Soil Metabolism.
7/ Not required because it is assumed compounds will not bioaccumulate. If the octanol/water coefficient is found to be greater than 1000, then these data may be required.
8/ Because of the chemical similarities of boric acid, borax, and disodium octaborate tetrahydrate, data will need to be generated on only one of these compounds to satisfy the data requirements for the others. Desorption data required - adsorption is satisfied.

TABLE A
GENERIC DATA REQUIREMENTS FOR BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

Data Requirement	Composition 1/	Use Pattern 2/	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframe for Data Submission 9/
§158.135 Toxicology					
ACUTE TESTING:					
81-1 - Acute Oral Toxicity - Rat	TGAI	A,B,C,G,I	Yes	GS0024-027*	No
81-2 - Acute Dermal Toxicity - Rabbit	TGAI	A,B,C,G,I	Partially	GS0024-027*	No 3/
81-3 - Acute Inhalation Toxicity - Rat	TGAI	A,B,C,G,I	No		No 4/
81-7 - Delayed Neurotoxicity - Hen	TGAI	A,B,C,G,I	No		No 5/
SUBCHRONIC TESTING:					
82-1 - 90-Day Feeding: - Rodent, and	TGAI	A	Yes	GS0024-028*	No
- Non-rodent (Dog)			Yes	GS0024-028*	No
82-2 - 21-Day Dermal - Rabbit	TGAI		Not Required		
82-3 - 90-Day Dermal - Rabbit	TGAI		Not Required		
82-4 - 90-Day Inhalation: - Rat	TGAI		Not Required		
82-5 - 90-Day Neurotoxicity: - Hen & Mammal	TGAI		Not Required 5/		

TABLE A
GENERIC DATA REQUIREMENTS FOR BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

Data Requirement	Composition 1/	Use Pattern 2/	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframe for Data Submission 9/	
§158.135 Toxicology - Continued						
CHRONIC TESTING:						
83-1 - Chronic Toxicity - 2 species: - Rodent, and Non-rodent (Dog)	TGAI	A	Yes	GS0024-028* GS0024-029* GS0024-030*	No 6/	
83-2 - Oncogenicity - 2 species:	TGAI					
- Rat (preferred), and		A,B,C,G,I	Yes	GS0024-029*	No	
- Mouse (preferred)		A,B,C,G,I	No		Reserved 7/	
83-3 - Teratogenicity - 2 species: - Rat	TGAI	A,B,C,G,I	No		Yes	15 Months
- Rabbit						
83-4 - Reproduction - Rat 2-generation	TGAI	A,B,C,G,I	Yes	GS0024-030*	No	
MUTAGENICITY TESTING						
84-2 - Gene Mutation (Ames Test) Structural Chromosomal Aberration Other Genotoxic Effects	TGAI	A,B,C,G,I	No		Yes	12 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

Data Requirement	Composition [1]	Use Pattern [2]	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframe for Data Submission
SPECIAL TESTING					
85-1 - General Metabolism	PAI or PAIRA	A,B,C,G,I	Partially	000005621 000005631 GS0024-005	No [8]

TABLE A
GENERIC DATA REQUIREMENTS FOR BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

§158.135 Toxicology - Continued

1/ Composition: PAI = Pure active ingredient; PAIRA = Pure active ingredient, radiolabeled; Choice = Choice of several test substances determined on a case-by-case basis.
2/ The use patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Nonfood; C = Aquatic, Food Crop; D = Aquatic, Nonfood; E = Greenhouse, Food Crop; F = Greenhouse, Nonfood; G = Forestry; H = Domestic Outdoor; I = Indoor.
3/ Due to the lack of toxicity by the oral route (acute oral toxicity approximately 3-4 g/kg in rats) and the lack of toxicity in the dermal irritation study, no further testing is required.
4/ Test is not required because compound is not likely to be inhaled (i.e., less than 20% of the aerodynamic equivalent is composed of particles smaller than 10 microns in diameter).
5/ Boric acid and the boron containing salts are not organophosphate compounds and are not structurally related to a substance that causes delayed neurotoxicity.
6/ The rodent chronic toxicity study has been satisfied; the three chronic toxicity dog studies on file collectively fulfill the requirement for the chronic toxicity dog study.
7/ An oncogenicity study has been conducted by the National Toxicology Program and should be available to the Agency by December, 1986. Based upon the Agency's review and evaluation of this study additional data may be required. The rat oncogenicity study has been satisfied.
8/ These studies cited provide comparabile information on the metabolism of boric acid. Additional metabolism studies are not required.
9/ Data must be submitted within the indicated time frame, based on the data of the Guidance Docuement.
° 15 Month Due Date is January 31, 1987 .

*Data submitted by U.S. Borax and Chemical Corporation. These data may be compensable.

TABLE A
GENERIC DATA REQUIREMENTS FOR BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

Data Requirement	Composition 1/	Use Pattern 2/	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframe for Data Submission 3/
§158.145 Wildlife and Aquatic Organisms					
AVIAN AND MAMMALIAN TESTING					
71-1 - Acute Avian Oral Toxicity	TGAI	A,B,C,G,I	Yes	GS0024-017*	No
71-2 - Avian Subacute Dietary Toxicity					
- Upland Game Bird, and	TGAI	A,B,C,G,I	Yes	GS0024-018* GS0024-019*	No
- Waterfowl	TGAI	A,B,C,G,I	Yes	GS0024-020* GS0024-021*	No
71-3 - Wild Mammal Toxicity	TGAI	Not Required			
71-4 - Avian Reproduction - Upland Game Bird, and	TGAI	Not Required			
- Waterfowl					
71-5 - Simulated Field Testing - Mammals, and	TEP	Not Required			
- Birds					
- Actual Field Testing - Mammals, and	TEP	Not Required			
- Birds					

TABLE A
GENERIC DATA REQUIREMENTS FOR BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

Data Requirement	Composition 1/	Use Pattern 2/	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)?	Timeframe for Data Submission 3/
§158.145 Wildlife and Aquatic Organisms - Continued						
AQUATIC ORGANISM TESTING						
72-1 - Freshwater Fish Toxicity - Coldwater Fish Species, and	TGAI	A,B,C,G,I	Yes	GS0024-022	No	
- Warmwater Fish Species	TGAI	A,B,C,G,I	No		Yes 4/	9 Months
72-2 - Acute Toxicity to Freshwater Invertebrates	TGAI	A,B,C,G,I	Yes	GS0024-023	No	
72-3 - Acute Toxicity to Estuarine and Marine Organisms	TGAI	A,B,C				
- Fish		Reserved 5/				
- Mollusk		Reserved 5/				
- Shrimp		Reserved 5/				
72-4 - Fish Early Life Stage, and - Aquatic Invertebrate Life-Cycle	TGAI	A,B,C	No		Yes 6/	

TABLE A
GENERIC DATA REQUIREMENTS FOR BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

Data Requirement	Composition 1/	Use Pattern 2/	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframe for Data Submission 3/
§158.145 Wildlife and Aquatic Organisms - Continued					
72-5 - Fish - Life-Cycle	TGAI	A,B,C	Reserved 7/		
72-6 - Aquatic Organism Accumulation	TGAI, PAI OR Degradation Product		Not Required		
- Crustacean					
- Fish					
- Insect Nymph					
- Mollusk					
72-7 - Simulated Field Testing - Aquatic Organisms	TEP		Not Required		
- Actual Field Testing -Aquatic Organisms					

TABLE A
GENERIC DATA REQUIREMENTS FOR BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

§158.145 Wildlife and Aquatic Organisms - Continued

1/ Composition: TGAI = Technical grade of the active ingredient; PAI = pure active ingredient; TEP = Typical end-use product.
2/ The use patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Nonfood Crop; C = Aquatic, Food Crop; D = Aquatic, Nonfood; E = Greenhouse, Food Crop; F = Greenhouse, Nonfood; G = Forestry; H = Domestic Outdoor; I = Indoor.
3/ Data must be submitted within the indicated timeframe, based on the date of the Guidance Document.
° 9-Month Due Date is July 31, 1986.
4/ Data on borax or boric acid technical will satisfy the requirements. Data may be generated on either the borax or the boric acid technical.
5/ Pending the results of acute freshwater organism bioassays, these studies may be required.
6/ Data on technical borax or boric acid will satisfy requirements on all products under this Standard for such uses as ditchbanks, railroad rights of way, and citrus dip. The high rates, persistence, and likelihood for aquatic contamination require the following studies: daphnia life cycle and partial chronic on brook trout. A mysid shrimp cycle study may be required pending results of acute and chronic organism bioassays and further use information.
7/ Pending the results of acute and chronic organism bioassays and further use information a chronic sheepshead minnow may be required. Data on technical borax will satisfy requirements on all products under this Standard for such uses as ditchbanks and railroad rights of way.

*Data submitted by U.S. Borax. Data may be compensable.

**Data submitted by Kerr-McGee. Data may be compensable.

TABLE A
GENERIC DATA REQUIREMENTS FOR BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

Data Requirement	Composition 1/	Use Pattern 2/	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)?	Timeframe for Data Submission 3/
§158.155 Nontarget Insect						
NONTARGET INSECT TESTING - POLLINATORS:						
141-1 - Honey bee acute contact toxicity	TGAI	A,B,C	No		Yes	9 Months
141-2 - Honey bee - toxicity of residues on foliage	Reserved 4/					
141-4 - Honey bee subacute feeding study	Reserved 5/					
141-5 - Field testing for pollinators	Reserved 6/					

TABLE A
GENERIC DATA REQUIREMENTS FOR BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

Data Requirement	Composition 1/	Use Pattern 2/	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframe for Data Submission 3/
§158.155 Nontarget Insect - Continued					
NONTARGET INSECT TESTING - AQUATIC INSECTS:					
142-1 - Acute toxicity to aquatic insects	Reserved 7/				
142-1 - Aquatic insect life-cycle study	Reserved 7/				
142-3 - Simulated or actual field testing for aquatic insects	Reserved 7/				
143-1 - NONTARGET INSECT TESTING - PREDATORS AND PARASITES thru 143-3	Reserved 7/				

1/ Composition: TGAI = Technical grade of the active ingredient; TEP = Typical end-use product.
2/ The use patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Nonfood; C = Aquatic, Food Crop: D = Aquatic, Nonfood; E = Greenhouse, Food Crop; F = Greenhouse, Nonfood; G = Forestry; H = Domestic Outdoor; I = Indoor.
3/ Data must be submitted within the indicated timeframe, based on the date of the Guidance Document.
° 9-Month Due Date is July 31, 1986.
4/ Requirement for this test depends on results of acute contact toxicity study.
5/ Reserved pending development of test methodology.
6/ Decision to require field testing is made on a case-by-case basis, and depends on results of lower-tier testing.
7/ Reserved pending Agency decision as to whether the data requirement should be established.

TABLE B
PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

Guideline Citation and Name of Test	Test Substance	Guidelines Status	Are Data Required Yes	Are Data Required No	Footnote Number	Data Must Be Submitted Within Timeframe Listed Below 1/
§158.120 Product Chemistry						
Product Identity:						
61-1 - Product Identity and Disclosure of Ingredients	MP	R	[X]	[ ]	_____	6 Months
61-2 - Description of Beginning Materials and Manufacturing Process	MP	R	[X]	[ ]	_____	6 Months
61-3 - Discussion of Formation of Impurities	MP	R	[X]	[ ]	_____	6 Months
Analysis and Certification of Product Ingredients						
62-1 - Preliminary Analysis	MP	CR	[X]	[ ]	_____	12 Months
62-2 - Certification of Limits	MP	R	[X]	[ ]	_____	12 Months
62-3 - Analytical Methods to Verify Certified Limit	MP	R	[X]	[ ]	_____	12 Months
Physical and Chemical Characteristics						
63-2 - Color	MP	R	[X]	[ ]	_____	6 Months
63-3 - Physical State	MP	R	[X]	[ ]	_____	6 Months
63-4 - Odor	MP	R	[X]	[ ]	_____	6 Months

TABLE B
PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING
BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

Guideline Citation and Name of Test	Test Substance	Guidelines Status	Are Data Required Yes	Are Data Required No	Footnote Number	Data Must Be Submitted Within Timeframe Listed Below 1/
§158.120 Product Chemistry (Continued)						
Physical and Chemical Characteristics (Continued)						
63-7 - Density, Bulk Density, or Specific Gravity	MP	R	[X]	[ ]		6 Months
63-12 - pH	MP	CR	[X]	[ ]		6 Months
63-14 - Oxidizing or Reducing Action	MP	CR	[X]	[ ]		6 Months
63-15 - Flammability	MP	CR	[ ]	[X]	N/A	6 Months
63-16 - Explodability	MP	R	[X]	[ ]		6 Months
63-17 - Storage Stability	MP	R	[X]	[ ]		15 Months
63-18 - Viscosity	MP	CR	[X]	[ ]	2/	6 Months
63-19 - Miscibility	MP	CR	[ ]	[X]	N/A	6 Months
63-20 - Corrosion Characteristics	MP	R	[X]	[ ]		15 Months
Other Requirements:						
64- 1 - Submittal of samples	MP	CR	[ ]	[X]		6 Months

MP = Manufacturing-use Product; R = Required; CR = Conditionally Required.

1/ Data must be submitted within the indicated timeframe, based on the date of the Guidance Document.
- 6-Month Due Date is April 30, 1986.
- 12-Month Due Date is November 30, 1986.
- 15-Month Due Date is February 28, 1987.

2/ Required for liquids only.

TABLE B
PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING
BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

Data Requirement	Composition 1/	Use Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframe for Data Submission
§158.135 Toxicology					
ACUTE TESTING					
81-1 - Acute Oral Toxicity - Rat	MP		Yes	GS0024-027*	No
81-2 - Acute Dermal Toxicity - Rabbit	MP		Partially	GS0024-027*	No 2/
81-3 - Acute Inhalation Toxicity - Rat	MP		No		No 3/
81-4 - Primary Eye Irritation - Rabbit	MP		Yes	GS0024-027*	No
81-5 - Primary Dermal Irritation - Rabbit	MP		Yes	GS0024-027*	No
81-6 - Dermal Sensitization - Guinea Pig	MP		Partially	GS0024-001	No 4/

1/ Composition: MP = Manufacturing-use product.
2/ Due to the lack of toxicity by the oral route (approximately 3-4 g/kg in rats) and the lack of toxicity in the dermal irritation study, no further testing is required.
3/ Test is not required because compound in not likely to be inhaled (i.e., less than 20% of the aerodynamic equivalent is composed of particulate smaller than 10 microns in diameter).
4/ In dermatology studies on 208 patients, boric acid appears to be non-sensitizing. Additional testing is not required.

* Data submitted by U.S. Borax and Chemical Corporation. These data may be compensable.

TABLE C
PRODUCT SPECIFIC DATA REQUIREMENTS FOR END-USE PRODUCTS CONTAINING
BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

Guideline Citation and Name of Test	Test Substance	Guidelines Status	Are Data Required Yes	Are Data Required No	Footnote Number	Data Must Be Submitted Within Timeframe Listed Below[1/]
§158.120 - PRODUCT CHEMISTRY						
Product Identity:						
61-1 - Product Identity and Disclosure of Ingredients	EP	R	[X]	[ ]	_____	6 Months
61-2 - Description of Beginning Materials and Manufacturing Process	EP	R	[X]	[ ]	_____	6 Months
61-3 - Discussion of Formation of Impurities	EP	R	[X]	[ ]	_____	6 Months
Analysis and Certification of Product Ingredients						
62-1 - Preliminary Analysis	EP	R	[X]	[ ]	_____	12 Months
62-2 - Certification of Limits	EP	R	[X]	[ ]	_____	6 Months
62-3 - Analytical Methods to Verify Certified Limit	EP	R	[X]	[ ]	_____	6 Months
Physical and Chemical Characteristics						
63-2 - Color	EP	R	[X]	[ ]	_____	6 Months
63-3 - Physical State	EP	R	[X]	[ ]	_____	6 Months
63-4 - Odor	EP	R	[X]	[ ]	_____	6 Months
63-7 - Density, Bulk Density, or Specific Gravity	EP	R	[X]	[ ]	_____	6 Months

: : : :

TABLE C
PRODUCT SPECIFIC DATA REQUIREMENTS FOR END-USE PRODUCTS CONTAINING
BORIC ACID, BORAX AND DIOSODIUM OCTABORATE TETRAHYDRATE

Guideline Citation and Name of Test	Test Substance	Guidelines Status	Are Data Required Yes	Are Data Required No	Footnote Number	Data Must Be Submitted Within Timeframe Listed Below[1/]
§158.120 - PRODUCT CHEMISTRY (Con't) Physical and Chemical Characteristics (Continued)						
63-12 - pH	EP	CR	[X]	[ ]		6 Months
63-14 - Oxidizing or Reducing Action	EP	CR	[X]	[ ]		6 Months
63-15 - Flammability	EP	CR	[ ]	[X]		
63-16 - Explodability	EP	R	[X]	[ ]		6 Months
63-17 - Storage Stability	EP	R	[X]	[ ]		12 Months
63-18 - Viscosity	EP	CR	[X]	[ ]	2/	6 Months
63-19 - Miscibility	EP	CR	[ ]	[X]		
63-20 - Corrosion Characteristics	EP	R	[X]	[ ]		15 Months
63-21 - Dielectric Breakdown Voltage	EP	CR	[ ]	[X]		
Other Requirements:						
64- 1 - Submittal of Samples	EP,TGAI,PAI	CR	[ ]	[X]		

R = Required; CR = Conditionally Required; EP = End-use Product; TGAI = Technical Grade of the Active Ingredient; PAI = Pure Active Ingredient.

1/ Data must be submitted within the indicated timeframe, based on the date of the Guidance Document.
- 6-Month Due Date is April 30, 1986.
- 12-Month Due Date is November 30, 1986.
- 15-Month Due Date is February 28, 1987.

2/ Required for liquid products only.

TABLE C
PRODUCT SPECIFIC DATA REQUIREMENTS FOR END-USE PRODUCTS CONTAINING
BORIC ACID, BORAX AND DIOSODIUM OCTABORATE TETRAHYDRATE

Guideline Citation and Name of Test	Test Substance	Guidelines Status	Are Data Required Yes	Are Data Required No	Footnote Number	Data Must Be Submitted Within Timeframe Listed Below[1/]
§158.120 - PRODUCT CHEMISTRY (Con't)						
Physical and Chemical Characteristics (Continued)						
63-12 - pH	EP	CR	[X]	[ ]		6 Months
63-14 - Oxidizing or Reducing Action	EP	CR	[X]	[ ]		6 Months
63-15 - Flammability	EP	CR	[ ]	[X]		
63-16 - Explodability	EP	R	[X]	[ ]		6 Months
63-17 - Storage Stability	EP	R	[X]	[ ]		12 Months
63-18 - Viscosity	EP	CR	[X]	[ ]	2/	6 Months
63-19 - Miscibility	EP	CR	[ ]	[X]		
63-20 - Corrosion Characteristics	EP	R	[X]	[ ]		15 Months
63-21 - Dielectric Breakdown Voltage	EP	CR	[ ]	[X]		
Other Requirements:						
64- 1 - Submittal of Samples	EP,TGAI,PAI	CR	[ ]	[X]		

R = Required; CR = Conditionally Required; EP = End-use Product; TGAI = Technical Grade of the Active Ingredient; PAI = Pure Active Ingredient.

1/ Data must be submitted within the indicated timeframe, based on the date of the Guidance Document.
- 6-Month Due Date is April 30, 1986.
- 12-Month Due Date is November 30, 1986.
- 15-Month Due Date is February 28, 1987.

2/ Required for liquid products only.

TABLE C
PRODUCT SPECIFIC DATA REQUIREMENTS FOR END-USE PRODUCTS CONTAINING
BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

Data Requirement	Composition 1/	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframe for Data Submission 2/	
§158.135 Toxicology					
ACUTE TESTING					
81-1 - Acute Oral Toxicity - Rat	EP	No		Yes 3/	9 Months
81-2 - Acute Dermal Toxicity - Rabbit	EP	No		Yes 3/	9 Months
81-3 - Acute Inhalation Toxicity - Rat	EP	No		Yes 3/	9 Months
81-4 - Primary Eye Irritation - Rabbit	EP	No		Yes 3/	9 Months
81-5 - Primary Dermal Irritation - Rabbit	EP	No		Yes 3/	9 Months
81-6 - Dermal Sensitization - Guinea Pig	EP	No		Yes 3/	9 Months

1/ Composition: MP = Manufacturing-use product.
2/ Data must be submitted within the indicated timeframe, based on the date of the Guidance Document.
° 9-Month Due Date is July 31, 1986.
3/ Each registrant is required to submit or reference data on his formulated product.

TABLE C
PRODUCT SPECIFIC DATA REQUIREMENTS FOR END-USE PRODUCTS CONTAINING
BORIC ACID, BORAX AND DISODIUM OCTABORATE TETRAHYDRATE

Data Requirement	Composition [1]	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Timeframe for Data Submission [2]
§158.160 Product Performance				
Efficacy data - to support the claim for each of the following pests:	Each Formulation [5]	No	000038282 [6]	Yes 12 Months
° Fleas, ticks, carpet beetles, termites [3], drugstore beetles, ground beetles, hibernating stages of cluster flies, elm leaf beetles, clover mites, boxelder bugs.				
° Cockroaches				
- Dust or bait products with > 0.5% Cab-O-Sil M-5	Each Formulation	No	000005618 [6], GS0024-009	Yes 12 Months
- All dust or bait products	Formulations equal to or less than 50% boric acid [5]	No	GS0024-011 [6], GS0024-012	Yes [4] 12 Months

1/ Composition: TEP = Typical end-use Product.
2/ Data must be submitted within the indicated timeframe, based on the date of the Guidance Document.
° 12-Month Due Date is November 30, 1986.
3/ For termites, data need not be submitted if the label claims are changed to "drywood termites" and the label directions for use are modified to reflect the current labeling guidelines.
4/ Since acceptable efficacy data have been submitted for EPA Reg. No. 42843-1, this product has satisfied this requirement.
5/ Data for lower percentage formulations may be used to support higher percentage formulations of the same type, i.e., acceptable data for a 95% dust would support a 99% dust with the same inerts.
6/ Reference data indicate that these formulations are not efficacious.

II. REQUIREMENT FOR SUBMISSION OF GENERIC DATA

A. This portion of the guidance document is a Notice issued under the authority of FIFRA sec. 3(c)(2)(B). The tables following this section list the data required for maintaining the registrability of each product.

EPA has determined that additional generic data described in Table A must be submitted to EPA for evaluation in order to maintain in effect the registration(s) of your product(s) identified as an attachment to the cover letter accompanying this guidance document. As required by FIFRA sec. 3(c)(2)(B), you are required to take appropriate steps to comply with this Notice.

EPA may suspend the registration of each of those products unless, within the specified time, you have informed EPA how you will satisfy the requirements of this Notice. Any such suspension will remain in effect until you have complied with the terms of this Notice.

B. What Generic Data[1/] Must be Submitted. You may determine which generic data you must submit by consulting Table A at the end of this chapter. That table lists the generic data needed to evaluate the continued registrability of all products, and the dates by which the data must be submitted. The required studies must be conducted in accordance with EPA approved protocols (such as those contained in the Pesticide Assessment Guidelines [2/] or data collected under the approved protocols of the Organization for Economic Cooperation and Development (OECD). If you do not wish to develop data in support of certain uses appearing in your labeling, you may delete those uses at the time you submit your revised labeling.

For certain kinds of testing (generally ecological effects), EPA requires the test substance to be a "typical formulation," and in those cases EPA needs data of that type

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1/ Generic data pertain to the properties or effects of a particular ingredient, and thus are relevant to an evaluation of the risks of all products containing that ingredient, regardless of the product's unique composition or specific use. Product-specific data relate only to the properties or effects of a product with a particular composition (or a group of products with closely similar composition).

2/ The Pesticide Assessment Guidelines are available in hard copy or microfiche from the National Technical Information Service, 5285 Port Royal Road, Springfield, Va. 22161.

for each major formulation category (e.g., emulsifiable concentrates, wettable powders, granulars, etc.) These are classified as generic data and when needed are specified in Table A. EPA may possess data on certain "typical formulations" but not others. Note: "Typical formulation" data should not be confused with product-specific data (Table B) which are required on each formulation. Product-specific data are further explained in Chapter III of this document.

C. Options Available for Complying With Requirements to Submit Data

Within 90 days of your receipt of this Notice you must submit to EPA a completed copy of the form entitled "FIFRA Section 3(c)(2)(B) Summary Sheet" [EPA Form 8580-1, Appendix II-3] for each of your products. On that form you must state which of the following methods you will use to comply with the requirements of this Notice:

1. (a) Notify EPA that you will submit the data, and

(b) either submit the existing data you believe will satisfy the requirement, or state that you will generate the data by conducting testing. If the test procedures you will use deviate from (or are not specified in) the Pesticide Assessment Guidelines or protocols contained in the Reports of Expert Groups to the Chemicals Group, Organization for Economic Cooperation and Development (OECD) Chemicals Testing Programme, you must enclose the protocols you will use.

OR

2. Notify EPA that you have entered into an agreement with one or more other registrants to jointly develop (or share in the cost of developing) the data. If you elect this option, you must notify EPA which registrant(s) are parties to the agreement.

OR

3. File with EPA a completed "Certification of Attempt to Enter Into an Agreement With Other Registrants for Development of Data" (EPA Form 8580-6, Appendix II-4)*/

*/ FIFRA sec. 3(c)(2)(B) authorizes joint development of data by two or more registrants, and provides a mechanism by which parties can obtain an arbitrator's decision if they agree to jointly develop data but fail to agree on all the terms of the agreement. The statute does not compel any registrant to agree to develop data jointly.

(Footnote continued on next page)

OR

4. Request that EPA amend your registration by deleting the uses for which the data are needed. (This option is not available to applicants for new products.)

OR

5. Request voluntary cancellation of the registration(s) of your products for which the data are needed. (This option is not available to applicants for new products.)

D. Procedures for Requesting Changes in Testing Methodology and Extensions of Time

EPA recognizes that you may disagree with our conclusions regarding the appropriate ways to develop the required data or how quickly the data must be submitted. If the test procedures you plan to use deviate from (or are not specified in) the registration guidelines or protocols contained in the reports of the Expert Groups to the Chemical Groups, Organization for Economic Cooperation and Development (OECD) Chemicals Testing Programme, you must submit the protocol for Agency review prior to the initiation of the test.

If you think that you will need more time to generate the required data than is allowed by EPA's schedule, you may submit a request for an extension of time. The extension request must be submitted in writing to the Product Manager.

(Footnote continued from previous page)
In EPA's opinion, joint data development by all registrants subject to a data requirement or a cost-sharing agreement among all such registrants is clearly in the public interest. Duplication of testing could increase costs, tie up testing facilities, and subject an unnecessarily large number of animals to testing.

As noted earlier, EPA has discretion to suspend the registration of a product when a registrant fails to submit data required under FIFRA Section 3(c)(2)(B). EPA has concluded that it should encourage joint testing rather than duplicative testing, and that suspension should be withheld in certain cases. to further this goal. Accordingly, if (1) a registrant has informed us of his intent to develop and submit data required by this Notice; and (2) a second registrant informs EPA that it has made a bona fide offer to the first registrant to share in the expenses of the testing [on terms to be agreed upon or determined by arbitration under FIFRA Section 3(c)(2)(B)(iii)]; and (3) the first registrant has declined to agree to enter into a cost-sharing agreement, EPA will not suspend the second firm's registration.

The extension request should state the reasons why you believe that an extension is appropriate. While EPA considers your request, you must strive to meet the deadline for submitting the required data.

III. REQUIREMENT FOR SUBMISSION OF PRODUCT-SPECIFIC DATA

Note: Unless stated otherwise in Section I, Regulatory Position and Rationale, this Section applies only to manufacturing use products, not to end use products.

A necessary first step in determining which statements must appear on your product's label is the completion and submission to EPA of product-specific data* listed on the form entitled "Product Specific Data Report" (EPA Form 8580-4, Appendix III-1) to fill gaps identified by EPA concerning your product. Under the authority of FIFRA sec. 3(c)(2)(B), EPA has determined that you must submit these data to EPA in order to reregister your product(s). All of these data must be submitted not later than six months after you receive this guidance document.

Table B--Product-Specific Data Requirements for Manufacturing Use Products--lists the product specific data you must submit. Data that are required to be submitted are identified in the column of those tables entitled "Must Data By Submitted Under §3(c)(2)(B)."

IV. SUBMISSION OF REVISED LABELING

Note: This section applies to end use products only to the extent described in Section I (Regulatory Position and Rationale). Otherwise, the following information pertains exclusively to manufacturing use products.

FIFRA requires each product to be labeled with accurate, complete and sufficient instructions and precautions, reflecting the results of data concerning the product and its ingredients. Labeling requirements are set out in 40 CFR 162.10 (see Appendix IV-1) and are summarized for products containing this active ingredient as part of this Guidance Document (See Appendix IV-2). Applications submitted in response to this notice must include draft labeling for Agency review.

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*/ Product specific data pertain to data that support the formulation which is marketed; it usually includes product chemistry data and acute toxicity data.

If you fail to submit revised labeling information complying with this section (supplemented by requirements described in Section I, Regulatory Position and Rationale), EPA may issue a notice of intent to cancel the registration under FIFRA sec. 6(b)(1).

A. Label Contents

40 CFR 162.10 requires that certain specific labeling statements appear at certain locations on the label. This is referred to as format labeling. Specific label items listed below are keyed to Appendix IV-2.

Item 1. PRODUCT NAME - The name, brand or trademark is required to be located on the front panel, preferably centered in the upper part of the panel. The name of a product will not be accepted if it is false or misleading.

Item 2. COMPANY NAME AND ADDRESS - The name and address of the registrant or distributor is required on the label. The name and address should preferably be located at the bottom of the front panel or at the end of the label text.

Item 3. NET CONTENTS - A net contents statement is required on all labels or on the container of the pesticide. The preferred location is the bottom of the front panel immediately above the company name and address, or at the end of the label text. The net contents must be expressed in the largest suitable unit, e.g., "1 pound 10 ounces" rather than "26 ounces." In addition to English units, net contents may be expressed in metric units. See Appendix IV-1. [40 CFR 162.10(d)]

Item 4. EPA REGISTRATION NUMBER - The registration number assigned to the pesticide product must appear on the label, preceded by the phrase "EPA Registration No.," or "EPA Reg. No." The registration number must be set in type of a size and style similar to other print on that part of the label on which it appears and must run parallel to it. The registration number and the required identifying phrase must not appear in such a manner as to suggest or imply recommendation or endorsement of the product by the Agency. See Appendix IV-1. [40 CFR 162.10(e)]

Item 5. EPA ESTABLISHMENT NUMBER - The EPA establishment number, preceded by the phrase "EPA Est." is the final establishment at which the product was produced, and may appear in any suitable location on the label or immediate container. It must also appear on the wrapper or outside container of the package if the EPA establishment number on the immediate container cannot be clearly read through such wrapper or container. See Appendix IV-1. [40 CFR 162.10(f)]

Item 6A. INGREDIENTS STATEMENT - An ingredients statement is required on the front panel. The ingredients statement must contain the name and percentage by weight of each active ingredient and the total percentage by weight of all inert ingredients. The preferred location is immediately below the product name. The ingredients statement must run parallel with, and be clearly distinguished from, other text on the panel. It must not be placed in the body of other text. See Appendix IV-1. [40 CFR 162.10(g)]

Item 6B. POUNDS PER GALLON STATEMENT - For liquid agricultural formulations, the pounds per gallon of active ingredient must be indicated on the label.

Item 7. FRONT LABEL PRECAUTIONARY STATEMENTS - Front panel precautionary statements must be grouped together, preferably within a block outline. The table below shows the minimum type size requirements for various size labels.

Size of Label on Front Panel in Square Inches	Signal Word Minimum Type Size All Capitals	"Keep Out of Reach of Children" Minimum Type Size
5 and under	6 point	6 point
above 5 to 10	10 point	6 point
above 10 to 15	12 point	8 point
above 15 to 30	14 point	10 point
over 30	18 point	12 point

Item 7A. CHILD HAZARD WARNING STATEMENT - The statement "Keep Out of Reach of Children" must be located on the front panel above the signal word except where contact with children during distribution or use is unlikely. See Appendix IV-1. [40 CFR 162.10(h)(1)(ii)]

Item 7B. SIGNAL WORD - The signal word (DANGER, WARNING, or CAUTION) is required on the front panel immediately below the child hazard warning statement. See Appendix IV-1. [40 CFR 162.10 (h)(1)(i)]

Item 7C. SKULL & CROSSBONES AND WORD "POISON" - On products assigned a toxicity Category I on the basis of oral, dermal, or inhalation toxicity, the word "Poison" shall appear on the label in red on a background of distinctly contrasting color and the skull and crossbones shall appear in immediate proximity to the word POISON. See Appendix IV-1. [40 CFR 162.10(h)(1)(i)]

Item 7D. STATEMENT OF PRACTICAL TREATMENT - A statement of practical treatment (first aid or other) shall appear on the label of pesticide products in toxicity Categories I, II, and III. See Appendix IV-1. [40 CFR 162.10(h)(1)(iii)]

Item 7E. REFERRAL STATEMENT - The statement "See Side (or Back) Panel for Additional Precautionary Statements" is required on the front panel for all products, unless all required precautionary statements appear on the front panel. See Appendix IV-1. [40 CFR 162.10(h)(1)(iii)]

Item 8. SIDE/BACK PANEL PRECAUTIONARY LABELING - The precautionary statements listed below must appear together on the label under the heading "PRECAUTIONARY STATEMENTS." The preferred location is at the top of the side or back panel preceding the directions for use, and it is preferred that these statements be surrounded by a block outline. Each of the three hazard warning statements must be headed by the appropriate hazard title. See Appendix IV-1. [40 CFR 162.10 (h)(2)].

Item 8A. HAZARD TO HUMANS AND DOMESTIC ANIMALS - Where a hazard exists to humans or domestic animals, precautionary statements are required indicating the particular hazard, the route(s) of exposure and the precautions to be taken to avoid accident, injury or damage. See Appendix IV-1. [40 CFR 162.10 (h)(2)(i)]

Item 8B. ENVIRONMENTAL HAZARD - Where a hazard exists to non-target organisms excluding humans and domestic animals, precautionary statements are required stating the nature of the hazard and the appropriate precautions to avoid potential accident, injury, or damage. See Appendix IV-1. [40 CFR 162.10(h)(2)(ii)]

Item 8C. PHYSICAL OR CHEMICAL HAZARD

1. Flammability statement. Precautionary statements relating to flammability of a product are required to appear on the label if it meets the criteria in Appendix IV-3. The requirement is based on the results of the flashpoint determinations and flame extension tests required to be submitted for all products. These statements are to be located in the side/back panel precautionary statements section, preceded by the heading "Physical/Chemical Hazards." Note that no signal word is used in conjunction with the flammability statements.

2. Criteria for declaration of non-flammability. The following criteria will be used to determine if a product is non-flammable:

a. A "non-flammable gas" is a gas (or mixture of gases) that will not ignite when a lighted match is placed against the open cylinder valve.

b. A "non-flammable liquid" is one having a flashpoint greater than 350°F (177°C).

c. A "non-flammable aerosol" is one which meets the following criteria:

i. The flame extension is zero inches;

ii. There is no flashback; and

iii. The flashpoint of the non-volatile liquid component is greater than 350°F (177°C).

3. Declaration of non-flammability. Products which meet the criteria for non-flammability specified above may bear the notation "non-flammable" or "non-flammable (gas, liquid, etc.)" on the label. It may appear as a substatement to the ingredients statement, or on a back or side panel, but shall not be highlighted or emphasized (as with an inordinately large type size) in any way that may detract from precaution.

4. Other physical/chemical hazard statements. When chemistry data demonstrate hazards of a physical or chemical nature other than flammability, appropriate statements of hazard will be prescribed. Such statements may address hazards of explosivity, oxidizing or reducing capability, or mixing with other substances to produce toxic fumes.

Item 9A. RESTRICTED USE CLASSIFICATION - FIFRA sec. 3(d) requires that all pesticide formulations/uses be classified for either general or restricted use. Products classified for restricted use may be limited to use by certified applicators or persons under their direct supervision (or may be subject to other restrictions that may be imposed by regulation).

In the Registration Standard, the Agency has (1) indicated certain formulations/uses are to be restricted (Section I indicates why the product has been classified for restricted use); or (2) reserved any classification decision until appropriate data are submitted.

The Regulatory Position and Rationale states whether products containing this active ingredient are classified for restricted use. If they are restricted the draft label(s) submitted to the Agency as part of your application must reflect this determination (see below).

If you do not believe that your product should be classified for restricted use, you must submit any information and rationale with your application for reregistration. During the Agency's review of your application, your proposed classification determination will be evaluated in accordance with the provisions of 40 CFR 162.11(c). You will be notified of the Agency's classification decision.

Classification Labeling Requirements

If this Guidance Document indicates that your product has been classified for restricted use, the following label requirements apply:

1. Front panel statement of restricted use classification.

   a. The statement "Restricted Use Pesticide" must appear at the top of the front panel of the label. The statement must be set in type of the same minimum size as required for human hazard signal word (see table in 40 CFR 162.10(h)(1)(iv)

   b. Directly below this statement on the front panel, a summary statement of the terms of restriction must appear (including the reasons for restriction if specified in Section I). If use is restricted to certified applicators, the following statement is required: "For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's Certification."

2. Some but not all uses restricted. If the Regulatory Position and Rationale states that some uses are classified for restricted use, and some are unclassified, several courses of action are available:

   a. You may label the product for Restricted use. If you do so, you may include on the label uses that are unrestricted, but you may not distinguish them on the label as being unrestricted.

   b. You may delete all restricted uses from your label and submit draft labeling bearing only unrestricted uses.

   c. You may "split" your registration, i.e., register two separate products with identical formulations, one bearing only unrestricted uses, and the other bearing restricted uses. To do so, submit two applications for reregistration, each containing all forms and necessary labels. Both applications should be submitted simultaneously. Note that the products will be assigned separate registration numbers.

Item 9B [There is no Item 9B].

Item 9C. MISUSE STATEMENT - All products must bear the misuse statement, "It is a violation of Federal law to use this product in a manner inconsistent with its labeling." This statement appears at the beginning of the directions for use, directly beneath the heading of that section.

Item 10A. REENTRY STATEMENT - If a reentry interval has been established by the Agency, it must be included on the label. Additional worker protection statements may be required in accordance with PR Notice 83-2, March 29, 1983.

Item 10B [There is no Item 10B].

Item 10C. STORAGE AND DISPOSAL BLOCK - All labels are required to bear storage and disposal statements. These statements are developed for specific containers, sizes, and chemical content. These instructions must be grouped and appear under the heading "Storage and Disposal" in the directions for use. This heading must be set in the same type sizes as required for the child hazard warning. Refer to Appendix IV-4 to determine the disposal instructions appropriate for your products.

Item 10D. DIRECTIONS FOR USE - Directions for use must be stated in terms which can be easily read and understood by the average person likely to use or to supervise the use of the pesticide. When followed, directions must be adequate to protect the public from fraud and from personal injury and to prevent unreasonable adverse effects on the environment. See Appendix IV-1. [40 CFR 162.10]

B. Collateral Labeling

Bulletins, leaflets, circulars, brochures, data sheets, flyers, or other written or graphic printed matter which is referred to on the label or which is to accompany the product are termed collateral labeling. Such labeling may not bear claims or representations that differ in substance from those accepted in connection with registration of the product. It should be made part of the response to this notice and submitted for review.

V. INSTRUCTIONS FOR SUBMISSION

A. For Manufacturing Products (MP) containing Boric Acid and Boron Containing Salts as an active ingredient.

1. Within 90 days from receipt of this document, you must submit to the Product Manager in the Registration Division at the address given at the end of this section:

a. "FIFRA Section 3(c)(2)(B) Summary Sheet" EPA Form 8580-1. Refer to Appendix II-3 with appropriate attachments.

If on the Summary Sheet, you commit to develop the data, request a minor chemical exemption, present arguments that a data requirement is not applicable, or submit protocols or modified protocols for Agency review, you must also submit a copy of the Summary Sheet (and any supporting information) to the Office of Compliance Monitoring, which will be monitoring the data generated in response to this notice. This information should be submitted to the Office of Compliance Monitoring at the address given at the end of this section. (Actual studies are not to be submitted.)

b. Confidential Statement of Formula, EPA form 8580-4.

2. Within 6 months from receipt of this document you must submit to the Product Manager on the Registration Division:

a. Application for Pesticide Registration, EPA Form 8570-1.

b. Product Specific Data Report, EPA Form 8580-4 (Appendix III-1).

c. Two copies of any required product-specific data.

d. Two copies of draft labeling, including the label and associated brochures. If current labeling conforms to the requirements of this guidance document and the results of the short-term data, you may submit such labeling. End use product labeling must comply specifically with the instructions in Section I (Regulatory Position and Rationale) of this guidance document. The labeling should be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 inch files. The draft label must indicate the intended colors of the final label, clear indication of the front panel label, and the intended type sizes of the text.

e. Evidence of compliance with data support requirements of FIFRA sec. 3(c)(1)(D). Refer to 40 CFR 152.80-152.99 for latest requirements.

3. Within the times set forth in Table A, you must submit to the Registration Division all generic data, unless you are eligible for the formulator's exemption. If for any reason any test is delayed or aborted so that the agreed schedule cannot be met, notify the Product Manager and the Office of Compliance Monitoring.

B. For Manufacturing Use Products containing Boric Acid and Boron Containing Salts in combination with other active ingredients

1. Within 90 days from receipt of this document, you must submit:

a. "FIFRA Section 3(c)(2)(B) Summary Sheet," EPA Form 8580-1. Refer to Appendix II-3 with appropriate attachments.

If on the Summary Sheet, you commit to develop the data, request a minor chemical exemption, present arguments that a data requirement is not applicable, or submit protocols or modified protocols for Agency review, you must also submit a copy of the Summary Sheet (and any supporting information) to the Office of Compliance Monitoring, which will be monitoring the data generated in response to this notice. This information should be submitted to the Office of Compliance Monitoring at the address given at the end of this section. (Actual studies are not to be submitted.)

b. Confidential Statement of Formula, EPA Form 8580-4

2. Within the times set forth in Table A, you must submit to the Registration Division all generic data, unless you are eligible for the formulator's exemption. If for any reason any test is delayed or aborted so that the agreed schedule cannot be met, notify the Product Manager and the Office of Compliance Monitoring.

C. For End Use Products containing Boric Acid and Boron Containing Salts alone or in combination with other active ingredients:

1. Within 90 days from receipt of this document, you must submit:

a. "FIFRA Section 3(c)(2)(B) Summary Sheet," EPA Form 8580-1. Refer to Appendix II-3 with appropriate attachments.

If on the Summary Sheet, you commit to develop the data, request a minor chemical exemption, present arguments that a data requirement is not applicable, or submit protocols or modified protocols for Agency review, you must also submit a copy of the Summary Sheet (and any supporting information) to the Office of

Compliance Monitoring, which will be monitoring the data generated in response to this notice. This information should be submitted

to the Office of Compliance Monitoring at the address given at the end of this section. (Actual studies are not to be submitted.)

b. Confidential Statement of Formula, EPA Form 8570-4.

2. Within 6 months from receipt of this document you must submit:

a. Application for Pesticide Registration, EPA Form 8570-1.

b. Product-Specific Data Report, EPA Form 8580-4 (Appendix III-1).

c. Two copies of any required product-specific data. (Refer to Table C).

d. Two copies of draft labeling, including the label and associated brochures. If current labeling conforms to the requirements of this guidance document and the results of the short-term data, you may submit such labeling. End use product labeling must comply specifically with the instructions in Section I (Regulatory Position and Rationale) of this guidance document. Labeling should be either typewritten text on 8 1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8 1/2 inch files. The draft label must indicate the intended colors of the final label, clear indication of the front panel label, and the intended type sizes of the text.

e. Evidence of compliance with data support requirements of FIFRA sec. 3(c)(1)(D). Refer to 40 CFR 152.80-152.99 for latest requirements.

3. Within the time frames set forth in Table A, submit all generic data, unless you are eligible for the formulator's exemption.

D. For intrastate products containing Boric Acid and Boron Containing Salts either as the sole active ingredient or in combination with other active ingredients

These products are being called in for full Federal registration. Producers of these products are being sent a letter instructing them how to submit an application for registration.

E. Applications and other required information should be submitted to the following address:

William H. Miller
Product Manager, Team 16
Registration Division (TS-767C)
Office of Pesticide Programs
Environmental Protection Agency
401 M St., SW.
Washington, D.C. 20460
Phone No. (703) 557-2600

The address for submission to the Office of Compliance Monitoring is:

Laboratory Data Integrity Program
Office of Compliance Monitoring (EN-342)
Environmental Protection Agency
401 M St., SW.
Washington, D.C. 20460

Appendix II-1

Guide to Use of This Bibliography

1. CONTENT OF BIBLIOGRAPHY. This bibliography contains citations of all studies considered relevant by EPA in arriving at the positions and conclusions stated elsewhere in the Standard. Primary sources for studies in this bibliography have been the body of data submitted to EPA and its predecessor agencies in support of past regulatory decisions. Selections from other sources including the published literature, in those instances where they have been considered, will be included.

2. UNITS OF ENTRY. The unit of entry in this bibliography is called a "study." In the case of published materials, this corresponds closely to an article. In the case of unpublished materials submitted to the Agency, the Agency has sought to identify documents at a level parallel to the published article from within the typically larger volumes in which they were submitted. The resulting "studies" generally have a distinct title (or at least a single subject), can stand alone for purposes of review, and can be described with a conventional bibliographic citation. The Agency has attempted also to unite basic documents and commentaries upon them, treating them as a single study.

3. IDENTIFICATION OF ENTRIES. The entries in this bibliography are sorted numerically by "Master Record Identifier," or MRID, number. This number is unique to the citation, and should be used at any time specific reference is required. It is not related to the six-digit "Accession Number" which has been used to identify volumes of submitted studies; see paragraph 4(d)(4) below for a further explanation. In a few cases, entries added to the bibliography late in the review may be preceded by a nine-character temporary identifier. These entries are listed after all MRID entries. This temporary identifier number is also to be used whenever specific reference is needed.

4. FORM OF ENTRY. In addition to the Master Record Identifier (MRID), each entry consists of a citation containing standard elements followed, in the case of material submitted to EPA, by a description of the earliest known submission. Bibliographic conventions used reflect the standards of the American National Standards Institute (ANSI), expanded to provide for certain special needs.

a. Author. Whenever the Agency could confidently identify one, the Agency has chosen to show a personal author. When no individual was identified, the Agency has shown an identifiable laboratory or testing facility as author. As a last resort, the Agency has shown the first submitter as author.

b. Document Date. When the date appears as four digits with no question marks, the Agency took it directly from the document. When a four-digit date is followed by a question mark, the bibliographer deduced the date from evidence in the document. When the date appears as (19??), the Agency was unable to determine or estimate the date of the document.

c. Title. In some cases, it has been necessary for Agency bibliographers to create or enhance a document title. Any such editorial insertions are contained between square brackets.

d. Trailing Parentheses. For studies submitted to the Agency in the past, the trailing parentheses include (in addition to any self-explanatory text) the following elements describing the earliest known submission:

(1) Submission Date. The date of the earliest known submission appears immediately following the word "received."

(2) Administrative Number. The next element, immediately following the word "under," is the registration number, experimental use permit number, petition number, or other administrative number associated with the earliest known submission.

(3) Submitter. The third element is the submitter, following the phrase "submitted by." When authorship is defaulted to the submitter, this element is omitted.

(4) Volume Identification (Accession Numbers). The final element in the trailing parentheses identifies the EPA accession number of the volume in which the original submission of the study appears. The six-digit accession number follows the symbol "CDL," standing for "Company Data Library." This accession number is in turn followed by an alphabetic suffix which shows the relative position of the study within the volume. For example, within accession number 123456, the first study would be 123456-A; the second, 123456-B; the 26th, 123456-Z; and the 27th, 123456-AA.

OFFICE OF PESTICIDE PROGRAMS
REGISTRATION STANDARD BIBLIOGRAPHY
Citations Considered to be Part of the Data Base Supporting
Registrations Under the Boric Acid Standard

MRID CITATION

00005580 United States Borax & Chemical Corporation (19??) Boric Acid H3OB3 (Orthoboric Acid): Crystal, Granular or Powdered Technical, U.S.P. and Special Quality Grades: Technical Data Sheet IP-14. (Unpublished study including technical data sheet MC-11B, received Apr 20, 1976 under 38861-1; submitted by Sheila Johnson, Waukesha, Wis.; CDL:230071-B)

00005618 Moore, R.C. (1971?) Boric acid-silica Dusts for Control of German Cockroaches: Blattella germanica (L.) (Dictyoptera: Blattidae). (Unpublished study received Mar 6, 1972 under 10573-6; prepared by Univ. of Connecticut, Agricultural Experiment Station, Dept. of Entomology, submitted by Pest Control Products of Connecticut, New Haven, Conn.; CDL:004960-A)

00005621 Ploquin, J. (1967) Boron in foodstuffs. Bulletin de la Societe Scientifique d'Hygiene Alimentatre 55(1-3):70-113. (Also in unpublished submission received Apr 1, 1969 under 9F0783; submitted by United States Borax & Chemical Corp., Los Angeles, Calif.; CDL:091347-B)

00005631 Fisher, R.S. (19??) Boron--Its Occurrence in Nature, Foods, and Humans, and Its Toxicity. (Unpublished study received Apr 25, 1967 under 8E0630; submitted by Sunkist Growers, Inc., Los Angeles, Calif.; CDL:092924-B)

00005635 Babcock, S.G. (1968) Certificate of Analysis. (Unpublished study including letter dated Aug 12, 1968 from C.J. Waldapfel to Drew M. Baker, Jr., received on unknown date under 8E0630; prepared by Edward S. Babcock & Sons, submitted by Sunkist Growers, Inc., Los Angeles, Calif.; CDL:092924-H)

00038282 Anon. (19??) Pest Control. N.P. (pp. 190, 191 and 782 only; also in unpublished submission received Mar 20, 1968 under 6962-19; submitted by Madison-Bionics, Franklin Park, Ill.; CDL:009545-B)

OFFICE OF PESTICIDE PROGRAMS
REGISTRATION STANDARD BIBLIOGRAPHY
Citations Considered to be Part of the Data Base Supporting
Registrations Under the Boric Acid Standard

MRID	CITATION
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GS0024-002	Holak, W. (1971) Atomic absorption determination of boron in foods. Journal of the Association of Official Analytical Chemists 54(5):1138-1139.
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OFFICE OF PESTICIDE PROGRAMS
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MRID	CITATION
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GS0024-030	U.S. Borax Corporation. Toxicology 20 Mule Team® Boric Acid. Vol. IV. (Compilation: unpublished study received March 5, 1981 under 1624-117; CDL:244542).

OMB Approval No. 2000-0468 (Expires 12-31-8[illegible])

FIFRA SECTION 3(C)(2)(B) SUMMARY SHEET

EPA REGISTRATION NO

PRODUCT NAME

APPLICANT'S NAME

DATE GUIDANCE DOCUMENT ISSUED

With respect to the requirement to submit "generic" data imposed by the FIFRA section 3(C)(2)(B) notice contained in the referenced Guidance Document, I am responding in the following manner:

☐ 1. I will submit data in a timely manner to satisfy the following requirements. If the test procedures I will use deviate from (or are not specified in) the Registration Guidelines or the Protocols contained in the Reports of Expert Groups to the Chemicals Group, OECD Chemicals Testing Program, I enclose the protocols that I will use:

☐ 2. I have entered into an agreement with one or more other registrants under FIFRA section 3(C)(2)(B)(ii) to satisfy the following data requirements. The tests, and any required protocols, will be submitted to EPA by:

NAME OF OTHER REGISTRANT

☐ 3. I enclose a completed "Certification of Attempt to Enter Into an Agreement with Other Registrants for Development of Data" with respect to the following data requirements:

☐ 4. I request that you amend my registration by deleting the following uses (this option is not available to applicants for new products):

☐ 5. I request voluntary cancellation of the registration of this product. (This option is not available to applicants for new products.)

REGISTRANT'S AUTHORIZED REPRESENTATIVE	SIGNATURE	DATE

EPA Form 8580-1 (10-82)

OMB Approval No. 2000-0468 (Expires: 12-31-83)

CERTIFICATION OF ATTEMPT TO ENTER INTO AN AGREEMENT WITH OTHER REGISTRANTS FOR DEVELOPMENT OF DATA

(To qualify, certify ALL four items)

1. I am duly authorized to represent the following firm(s) who are subject to the requirements of a Notice under FIFRA Section 3(c)(2)(B) contained in a Guidance Document to submit data concerning the active ingredient:

GUIDANCE DOCUMENT DATE

ACTIVE INGREDIENT

NAME OF FIRM	EPA COMPANY NUMBER

(This firm or group of firms is referred to below as "my firm".)

2. My firm is willing to develop and submit the data as required by that Notice, if necessary. However, my firm would prefer to enter into an agreement with one or more other registrants to develop jointly, or to share in the cost of developing, the following required items or data:

3. My firm has offered in writing to enter into such an agreement. Copies of the offers are attached. That offer was irrevocable and included an offer to be bound by an arbitration decision under FIFRA Section 3(c)(2)(B)(iii) if final agreement on all terms could not be reached otherwise. This offer was made to the following firm(s) on the following date(s):

NAME OF FIRM	DATE OF OFFER

However, none of those firm(s) accepted my offer.

4. My firm requests that EPA not suspend the registration(s) of my firm's product(s), if any of the firms named in paragraph (3) above have agreed to submit the data listed in paragraph (2) above in accordance with the Notice. I understand EPA will promptly inform me whether my firm must submit data to avoid suspension of its registration(s) under FIFRA Section 3(c)(2)(B). (This statement does not apply to applicants for new products.) I give EPA permission to disclose this statement upon request.

TYPED NAME	SIGNATURE	DATE

EPA Form 8580-6 (10-82)

PRODUCT SPECIFIC DATA REPORT

EPA Registration No. _____ Guidance Document for _____

Date _____

Registration Guideline No.	Name of Test	Test not required for my product listed above (check below)	I am complying with data requirements by		(For EPA Use Only) Accession Numbers Assigned
			Citing MRID#	Submitting Data (Attached)	
§158.20 PRODUCT CHEMISTRY					
61-1	Identity of ingredients				
61-2	Statement of composition				
61-3	Discussion of formation of ingredients				
62-1	Preliminary analysis				
62-2	Certification of limits				
62-3	Analytical methods for enforcement limits				
63-2	Color				
63-3	Physical state				
63-4	Odor				
63-5	Melting point				
63-6	Boiling point				
63-7	Density, bulk-density, or specific gravity				
63-8	Solubility				
63-9	Vapor pressure				
63-10	Dissociation constant				
63-11	Octanol/water partition coefficient				
63-12	pH				

Appendix III-1 (continued)

Registration Guideline No.	Name of Test	Test not required for my product listed above (check below)	I am complying with data requirements by		(For EPA Use Only) Accession Numbers Assigned
			Citing MRID#	Submitting Data (Attached)	
63-13	Stability				
63-14	Oxidizing/reducing reaction				
63-15	Flammability				
63-16	Explodability				
63-17	Storage stability				
63-18	Viscosity				
63-19	Miscibility				
63-20	Corrosion characteristics				
63-21	Dielectric breakdown voltage				
§158.135 TOXICOLOGY					
81-1	Acute oral LD-50, rat				
81-2	Acute dermal LD-50				
81-3	Acute inhalation, LC-50 rat				
81-4	Primary eye irritation, rabbit				
81-5	Primary dermal irritation				
81-6	Dermal sensitization				

cant obtained the data from another firm (identify); applicant copied data from a publication; applicant obtained a copy of the data from EPA).

(d) The applicant shall submit with his application a statement that EPA, in its evaluation of the properties, efficacy, and safety of the formulated end-use product, may not consider any data as supporting the application, except the following data:

(1) The data the applicant has submitted to EPA under paragraph (b) of this section;

(2) Other data pertaining to the safety of the product's active ingredients, rather than to the safety of the end-use product; and

(3) Existing tolerances, food additive regulations, exemptions and other clearances issued under the Federal Food, Drug, and Cosmetic Act.

(e) If the applicant knows that any item of data he submitted under this section was generated by (or at the expense of) another person who originally submitted the data to EPA (or its predecessor, USDA) on or after January 1, 1970, to support an application for registration, experimental use permit, or amendment adding a new use to an existing registration, or for reregistration (unless the applicant and the original data submitter have reached written agreement on the amount and the terms of payment of any compensation that may be payable under FIFRA section 3(c)(1)(D)(ii)) with regard to approval of the application), the applicant shall submit to EPA a statement that he has furnished to each such original data submitter:

(1) A notification of the applicant's intent to apply for registration, including the proposed product name;

(2) An offer to pay the person compensation, with regard to the approval of the application, to the extent required by FIFRA sections 3(c)(1)(D) and 3(c)(2)(D);

(3) An identification of the item(s) of data to which the offer applies;

(4) An offer to commence negotiations to ascertain the amount and terms of compensation to be paid; and

(5) The applicant's name, address, and telephone number.

(f) If the applicant's product contains any active ingredient other than those that are present solely because of the incorporation into the product, during formulation, of one or more other registered pesticide products purchased from another producer, then the applicant shall also comply with § 162.9-5 as to such active ingredient, and the application shall contain an acknowledgment that for purposes of FIFRA section 3(c)(1)(D) the application relies on (and any resulting registration should be regarded as if it were based on the Administrator's consideration of) the following data:

(1) All data submitted or specifically cited by the applicant in support of the registration; and

(2) Each other item of data in the Agency's files which:

(i) Concerns the properties or effects of any such active ingredient; and

(ii) Is one of the types of data that EPA would require to be submitted for scientific review by EPA if the applicant sought the initial registration under FIFRA Section 3(c)(5) of a product with composition and intended uses identical to those proposed for the applicant's product, under the data requirements in effect on the date EPA approves the applicant's present application.

(Secs. 3, 6, and 25 of FIFRA, as amended; 7 U.S.C. 136 *et seq.*)

[44 FR 27953, May 11, 1979]

§ 162.10 Labeling requirements.

(a) *General*—(1) *Contents of the label.* Every pesticide product shall bear a label containing the information specified by the Act and the regulations in this Part. The contents of a label must show clearly and prominently the following:

(i) The name, brand, or trademark under which the product is sold as prescribed in paragraph (b) of this section;

(ii) The name and address of the producer, registrant, or person for whom produced as prescribed in paragraph (c) of this section;

(iii) The net contents as prescribed in paragraph (d) of this section;

APPENDIX IV-1
(continued)

(iv) The product registration number as prescribed in paragraph (e) of this section;

(v) The producing establishment number as prescribed in paragraph (f) of this section;

(vi) An ingredient statement as prescribed in paragraph (g) of this section;

(vii) Warning or precautionary statements as prescribed in paragraph (h) of this section;

(viii) The directions for use as prescribed in paragraph (i) of this section; and

(ix) The use classification(s) as prescribed in paragraph (j) of this section.

(2) *Prominence and legibility.* (i) All words, statements, graphic representations, designs or other information required on the labeling by the Act or the regulations in this part must be clearly legible to a person with normal vision, and must be placed with such conspicuousness (as compared with other words, statements, designs, or graphic matter on the labeling) and expressed in such terms as to render it likely to be read and understood by the ordinary individual under customary conditions of purchase and use.

(ii) All required label text must:

(A) Be set in 6-point or larger type;

(B) Appear on a clear contrasting background; and

(C) Not be obscured or crowded.

(3) *Language to be used.* All required label or labeling text shall appear in the English language. However, the Agency may require or the applicant may propose additional text in other languages as is considered necessary to protect the public. When additional text in another language is necessary, all labeling requirements will be applied equally to both the English and other-language versions of the labeling.

(4) *Placement of Label*—(i) *General.* The label shall appear on or be securely attached to the immediate container of the pesticide product. For purposes of this Section, and the misbranding provisions of the Act, "securely attached" shall mean that a label can reasonably be expected to remain affixed during the foreseeable conditions and period of use. If the immediate container is enclosed within a wrapper or outside container through which the label cannot be clearly read, the label must also be securely attached to such outside wrapper or container, if it is a part of the package as customarily distributed or sold.

(ii) *Tank cars and other bulk containers*—(A) *Transportation.* While a pesticide product is in transit, the appropriate provisions of 49 CFR Parts 170-189, concerning the transportation of hazardous materials, and specifically those provisions concerning the labeling, marking and placarding of hazardous materials and the vehicles carrying them, define the basic Federal requirements. In addition, when any registered pesticide product is transported in a tank car, tank truck or other mobile or portable bulk container, a copy of the accepted label must be attached to the shipping papers, and left with the consignee at the time of delivery.

(B) *Storage.* When pesticide products are stored in bulk containers, whether mobile or stationary, which remain in the custody of the user, a copy of the label or labeling, including all appropriate directions for use, shall be securely attached to the container in the immediate vicinity of the discharge control valve.

(5) *False or misleading statements.* Pursuant to section 2(q)(1)(A) of the Act, a pesticide or a device declared subject to the Act pursuant to § 162.15, is misbranded if its labeling is false or misleading in any particular including both pesticidal and non-pesticidal claims. Examples of statements or representations in the labeling which constitute misbranding include:

(i) A false or misleading statement concerning the composition of the product;

(ii) A false or misleading statement concerning the effectiveness of the product as a pesticide or device;

(iii) A false or misleading statement about the value of the product for purposes other than as a pesticide or device;

(iv) A false or misleading comparison with other pesticides or devices;

(v) Any statement directly or indirectly implying that the pesticide or device is recommended or endorsed by any agency of the Federal Government;

(vi) The name of a pesticide which contains two or more principal active ingredients if the name suggests one or more but not all such principal active ingredients even though the names of the other ingredients are stated elsewhere in the labeling.

(vii) A true statement used in such a way as to give a false or misleading impression to the purchaser;

(viii) Label disclaimers which negate or detract from labeling statements required under the Act and these regulations;

(ix) Claims as to the safety of the pesticide or its ingredients, including statements such as "safe," "nonpoisonous," "noninjurious," "harmless" or "nontoxic to humans and pets" with or without such a qualifying phrase as "when used as directed"; and

(x) Non-numerical and/or comparative statements on the safety of the product, including but not limited to:

(A) "Contains all natural ingredients";

(B) "Among the least toxic chemicals known";

(C) "Pollution approved".

(6) *Final printed labeling.* (i) Except as provided in paragraph (a)(8)(ii) of this section, final printed labeling must be submitted and accepted prior to registration. However, final printed labeling need not be submitted until draft label texts have been provisionally accepted by the Agency.

(ii) Clearly legible reproductions or photo reductions will be accepted for unusual labels such as those silk-screened directly onto glass or metal containers or large bag or drum labels. Such reproductions must be of microfilm reproduction quality.

(b) *Name, brand, or trademark.* (1) The name, brand, or trademark under which the pesticide product is sold shall appear on the front panel of the label.

(2) No name, brand, or trademark may appear on the label which:

(i) Is false or misleading, or

(ii) Has not been approved by the Administrator through registration or supplemental registration as an additional name pursuant to § 162.6(b)(4).

(c) *Name and address of producer, registrant, or person for whom produced.* An unqualified name and address given on the label shall be considered as the name and address of the producer. If the registrant's name appears on the label and the registrant is not the producer, or if the name of the person for whom the pesticide was produced appears on the label, it must be qualified by appropriate wording such as "Packed for • • •," "Distributed by • • •," or "Sold by • • •" to show that the name is not that of the producer.

(d) *Net weight or measure of contents.* (1) The net weight or measure of content shall be exclusive of wrappers or other materials and shall be the average content unless explicitly stated as a minimum quantity.

(2) If the pesticide is a liquid, the net content statement shall be in terms of liquid measure at 68° F (20°C) and shall be expressed in conventional American units of fluid ounces, pints, quarts, and gallons.

(3) If the pesticide is solid or semisolid, viscous or pressurized, or is a mixture of liquid and solid, the net content statement shall be in terms of weight expressed as avoirdupois pounds and ounces.

(4) In all cases, net content shall be stated in terms of the largest suitable units, i.e., "1 pound 10 ounces" rather than "26 ounces."

(5) In addition to the required units specified, net content may be expressed in metric units.

(6) Variation above minimum content or around an average is permissible only to the extent that it represents deviation unavoidable in good manufacturing practice. Variation below a stated minimum is not permitted. In no case shall the average content of the packages in a shipment fall below the stated average content.

(e) *Product registration number.* The registration number assigned to the pesticide product at the time of registration shall appear on the label, preceded by the phrase "EPA Registration No.," or the phrase "EPA Reg. No." The registration number shall be set in type of a size and style similar to other print on that part of the label on which it appears and shall run par-

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allel to it. The registration number and the required identifying phrase shall not appear in such a manner as to suggest or imply recommendation or endorsement of the product by the Agency.

(f) *Producing establishments registration number.* The producing establishment registration number preceded by the phrase "EPA Est.", of the final establishment at which the product was produced may appear in any suitable location on the label or immediate container. It must appear on the wrapper or outside container of the package if the EPA establishment registration number on the immediate container cannot be clearly read through such wrapper or container.

(g) *Ingredient statement.*—(1) *General.* The label of each pesticide product must bear a statement which contains the name and percentage by weight of each active ingredient, the total percentage by weight of all inert ingredients; and if the pesticide contains arsenic in any form, a statement of the percentages of total and water-soluble arsenic calculated as elemental arsenic. The active ingredients must be designated by the term "active ingredients" and the inert ingredients by the term "inert ingredients," or the singular forms of these terms when appropriate. Both terms shall be in the same type size, be aligned to the same margin and be equally prominent. The statement "Inert Ingredients, none" is not required for pesticides which contain 100 percent active ingredients. Unless the ingredient statement is a complete analysis of the pesticide, the term "analysis" shall not be used as a heading for the ingredient statement.

(2) *Position of ingredient statement.* (i) The ingredient statement is normally required on the front panel of the label. If there is an outside container or wrapper through which the ingredient statement cannot be clearly read, the ingredient statement must also appear on such outside container or wrapper. If the size or form of the package makes it impracticable to place the ingredient statement on the front panel of the label, permission may be granted for the ingredient statement to appear elsewhere.

(ii) The text of the ingredient statement must run parallel with other text on the panel on which it appears, and must be clearly distinguishable from and must not be placed in the body of other text.

(3) *Names to be used in ingredient statement.* The name used for each ingredient shall be the accepted common name, if there is one, followed by the chemical name. The common name may be used alone only if it is well known. If no common name has been established, the chemical name alone shall be used. In no case will the use of a trademark or proprietary name be permitted unless such name has been accepted as a common name by the Administrator under the authority of Section 25(c)(6).

(4) *Statements of percentages.* The percentages of ingredients shall be stated in terms of weight-to-weight. The sum of percentages of the active and the inert ingredients shall be 100. Percentages shall not be expressed by a range of values such as "22-25%." If the uses of the pesticide product are expressed as weight of active ingredient per unit area, a statement of the weight of active ingredient per unit volume of the pesticide formulation shall also appear in the ingredient statement.

(5) *Accuracy of stated percentages.* The percentages given shall be as precise as possible reflecting good manufacturing practice. If there may be unavoidable variation between manufacturing batches, the value stated for each active ingredient shall be the lowest percentage which may be present.

(6) *Deterioration.* Pesticides which change in chemical composition significantly must meet the following labeling requirements:

(i) In cases where it is determined that a pesticide formulation changes chemical composition significantly, the product must bear the following statement in a prominent position on the label: "Not for sale or use after [date]."

(ii) The product must meet all label claims up to the expiration time indicated on the label.

(7) *Inert ingredients.* The Administrator may require the name of any

inert ingredient(s) to be listed in the ingredient statement if he determines that such ingredient(s) may pose a hazard to man or the environment.

(h) *Warnings and precautionary statements.* Requir l warnings and precautionary statements concerning the general areas of toxicological hazard including hazard to children, environmental hazard, and physical or chemical hazard fall into two groups; those required on the front panel of the labeling and those which may appear elsewhere. Specific requirements concerning content, placement, type size, and prominence are given below.

(1) *Required front panel statements.* With the exception of the child hazard warning statement, the text required on the front panel of the label is determined by the Toxicity Category of the pesticide. The category is assigned on the basis of the highest hazard shown by any of the indicators in the table below:

Hazard indicators	Toxicity categories			
	I	II	III	IV
Oral LD_{50}	Up to and including 50 mg/kg	From 50 thru 500 mg/kg	From 500 thru 5000 mg/kg	Greater than 5000 mg/kg
Inhalation LC_{50}	Up to and including .2 mg/liter	From .2 thru 2 mg/liter	From 2 thru 20 mg/liter	Greater than 20 mg/liter
Dermal LD_{50}	Up to and including 200 mg/kg	From 200 thru 2000	From 2,000 thru 20,000	Greater than 20,000
Eye effects	Corrosive, corneal opacity not reversible within 7 days	Corneal opacity reversible within 7 days; irritation persisting for 7 days	No corneal opacity; irritation reversible within 7 days	No irritation
Skin effects	Corrosive	Severe irritation at 72 hours	Moderate irritation at 72 hours	Mild or slight irritation at 72 hours

(i) *Human hazard signal word.*—(A) *Toxicity Category I.* All pesticide products meeting the criteria of Toxicity Category I shall bear on the front panel the signal word "Danger." In addition if the product was assigned to Toxicity Category I on the basis of its oral, inhalation or dermal toxicity (as distinct from skin and eye local effects) the word "Poison" shall appear in red on a background of distinctly contrasting color and the skull and crossbones shall appear in immediate proximity to the word "poison."

(B) *Toxicity Category II.* All pesticide products meeting the criteria of Toxicity Category II shall bear on the front panel the signal word "Warning."

(C) *Toxicity Category III.* All pesticide products meeting the criteria of Toxicity Category III shall bear on the front panel the signal word "Caution."

(D) *Toxicity Category IV.* All pesticide products meeting the criteria of Toxicity Category IV shall bear on the front panel the signal word "Caution."

(E) *Use of signal words.* Use of any signal word(s) associated with a higher Toxicity Category is not permitted except when the Agency determines that such labeling is necessary to prevent unreasonable adverse effects on man or the environment. In no case shall more than one human hazard signal word appear on the front panel of a label.

(ii) *Child hazard warning.* Every pesticide product label shall bear on the front panel the statement "Keep out of reach of children." Only in cases where the likelihood of contact with children during distribution, marketing, storage or use is demonstrated by the applicant to be extremely remote, or if the nature of the pesticide is such that it is approved for use on infants or small children, may the Administrator waive this requirement.

(iii) *Statement of practical treatment.*—(A) *Toxicity Category I.* A statement of practical treatment (first aid or other) shall appear on the front panel of the label of all pesticides falling into Toxicity Category I on the basis of oral, inhalation or dermal toxicity. The Agency may, however, permit reasonable variations in the placement of the statement of practi

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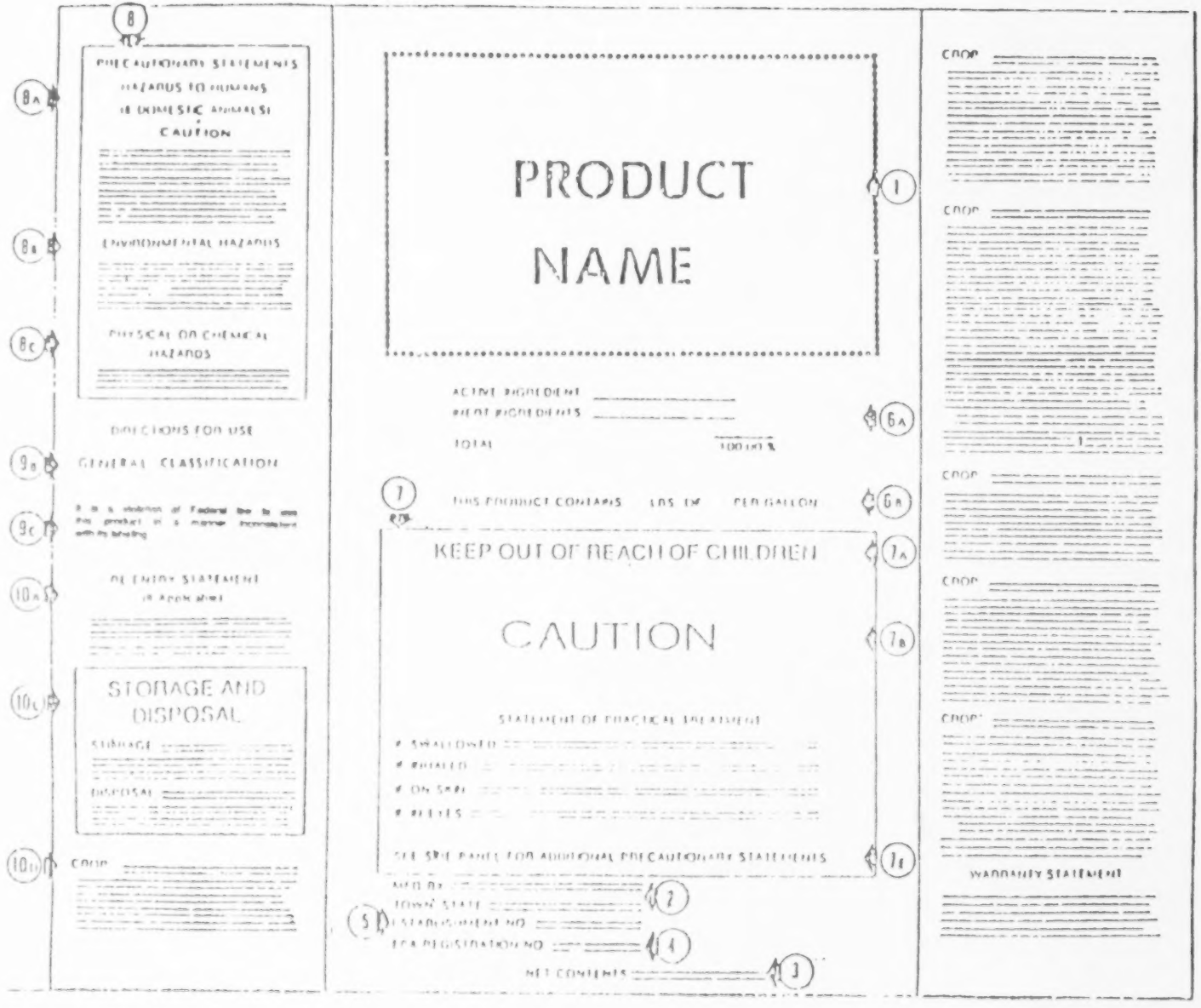
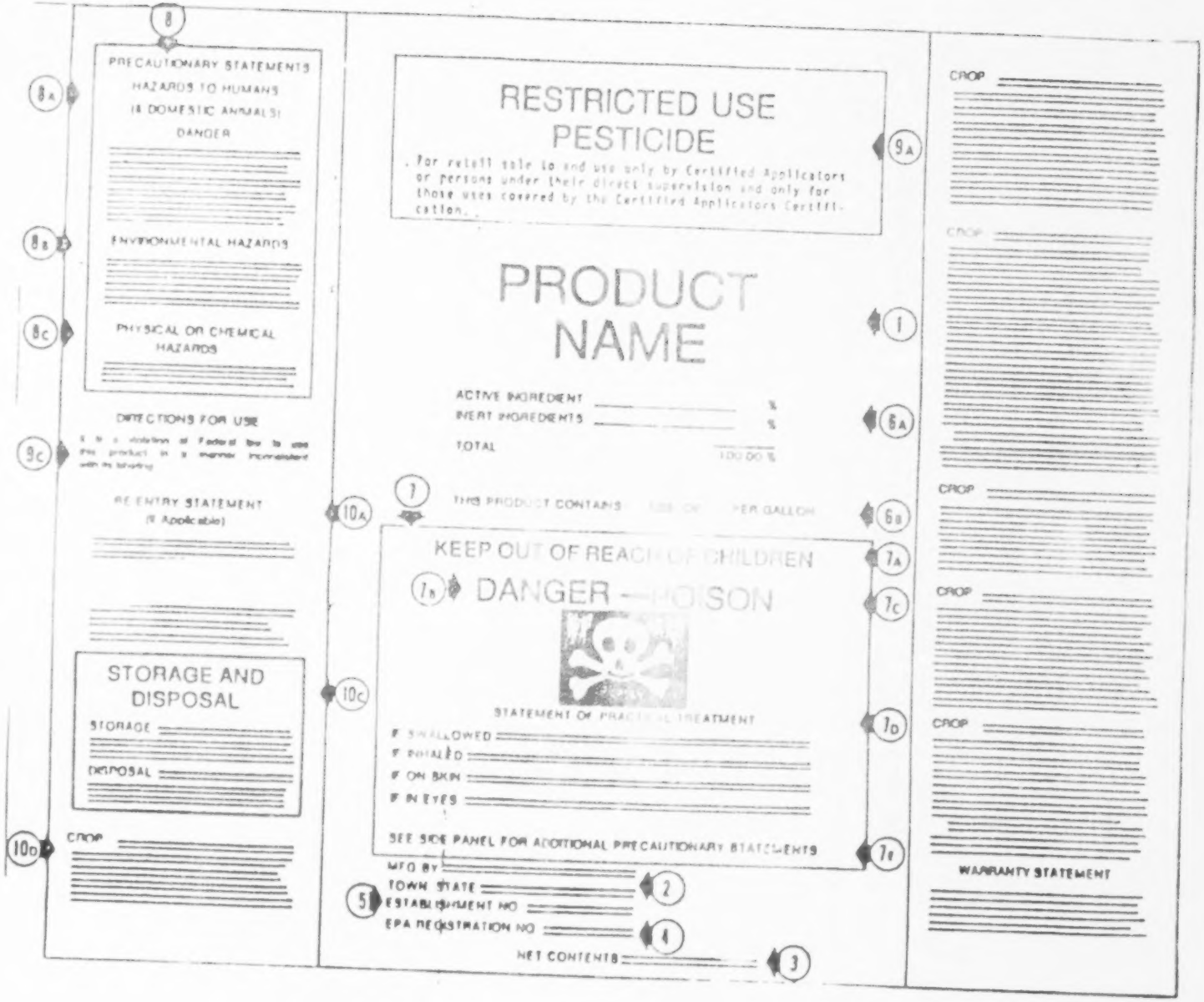

8
PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS
(& DOMESTIC ANIMALS)
CAUTION
8A
ENVIRONMENTAL HAZARDS
8B
PHYSICAL OR CHEMICAL
HAZARDS
8C
DIRECTIONS FOR USE
9B
GENERAL CLASSIFICATION
9C
It is a violation of Federal law to use
this product in a manner inconsistent
with its labeling
PRE-ENTRY STATEMENT
(IF APPLICABLE)
10A
STORAGE AND
DISPOSAL
STORAGE
DISPOSAL
10C
CROP
10D
PRODUCT
NAME
1
ACTIVE INGREDIENT
INERT INGREDIENTS
TOTAL
100.00 %
6A
7
THIS PRODUCT CONTAINS LBS EA PER GALLON
6B
KEEP OUT OF REACH OF CHILDREN
7A
CAUTION
7B
STATEMENT OF PRACTICAL TREATMENT
SWALLOWED
INHALED
ON SKIN
EYES
SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS
7C
NET CONTENTS
3
EPA REGISTRATION NO
4
ESTABLISHMENT NO
5
TOWN STATE
2
NAME &
CROP
CROP
CROP
CROP
CROP
WARRANTY STATEMENT


8
PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS
(& DOMESTIC ANIMALS)
DANGER
8A
ENVIRONMENTAL HAZARDS
8B
PHYSICAL OR CHEMICAL HAZARDS
8C
DIRECTIONS FOR USE
9C
RE-ENTRY STATEMENT
(If Applicable)
10A
STORAGE AND DISPOSAL
STORAGE
DISPOSAL
10C
CROP
10D
RESTRICTED USE PESTICIDE
For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicators Certification.
9A
PRODUCT NAME
1
ACTIVE INGREDIENT
INERT INGREDIENTS
TOTAL
100.00 %
6A
7
THIS PRODUCT CONTAINS
PER GALLON
6B
KEEP OUT OF REACH OF CHILDREN
7A
7B
DANGER — POISON
7C
STATEMENT OF PRACTICAL TREATMENT
7D
IF SWALLOWED
IF INHALED
IF ON SKIN
IF IN EYES
SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS
7E
MFG BY
TOWN STATE
2
5
ESTABLISHMENT NO
EPA REGISTRATION NO
4
NET CONTENTS
3
CROP
CROP
CROP
CROP
CROP
WARRANTY STATEMENT

LABELING REQUIREMENTS OF THE FIFRA, AS AMENDED

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
1	Product name	All products	Front panel	Center front panel	
2	Company name and address	All products	None	Bottom front panel or end of label text	If registrant is not the producer, must be qualified by "Packed for . . .," "Distributed by. . .," etc.
3	Net contents	All products	None	Bottom front panel or end of label text	May be in metric units in addition to U.S. units
4	EPA Reg. No.	All products	None	Front panel	Must be in similar type size and run parallel to other type.
5	EPA Est. No.	All products	None	Front panel, immediately before or following Reg. No.	May appear on the container instead of the label.
6A	Ingredients statement	All products	Front panel	Immediately following product name	Text must run parallel with other text on the panel.
6B	Pounds/gallon statement	Liquid products where dosage given as lbs. ai/unit area	Front panel	Directly below the main ingredients statement	
7	Front panel precautionary statements	All products	Front panel		All front panel precautionary statements must be grouped together, preferably blocked.
7A	Keep Out of Reach of Children (Child hazard warning)	All products	Front panel	Above signal word	Note type size requirements.
7B	Signal word	All products	Front panel	Immediately below child hazard warning	Note type size requirements.

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
7C	Skull & cross-bones and word POISON (in red)	All products which are Category I based on oral, dermal, or inhalation toxicity	Front panel	Both in close proximity to signal word	
7D	Statement of practical treatment	All products in Categories I, II, and III	Category I: Front panel unless referral statement is used. Others: Grouped with side panel precautionary statements.	Front panel for all.	
7E	Referral statement	All products where precautionary labeling appears on other than front panel.	Front panel		
8	Side/back panel precautionary statements	All products	None	Top or side of back panel preceding directions for use	Must be grouped under the headings in 8A, 8B, and 8C; preferably blocked
8A	Hazards to humans and domestic animals	All products in Categories I, II, and III	None	Same as above	Must be preceded by appropriate signal word.
8B	Environmental hazards	All products	None	Same as above	Environmental hazards include bee caution where applicable.

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
8C	Physical or chemical hazards	All pressurized products, others with flash points under 150°F	None	Same as above	
9A	Restricted block	All restricted products	Top center of front panel	Preferably blocked	Includes a statement of the terms of restriction. The words "RESTRICTED USE PESTICIDE" must be same type size as signal word.
9C	Misuse statement	All products	Immediately following heading of directions for use		
10A	Reentry statement	All cholinesterase inhibitors	In the directions for use	Immediately after misuse statement	
10C	Storage and disposal block	All products	In the directions for use	Immediately before specific directions for use or at the end of directions for use	Must be set apart and clearly distinguishable from from other directions for use.
10D	Directions for use	All products	None	None	May be in metric as well as U.S. units

LABELING REQUIREMENTS OF THE FIFRA, AS AMENDED

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3	Net contents	All products	None	Bottom front panel or end of label text	May be in metric units in addition to U.S. units
4	EPA Reg. No.	All products	None	Front panel	Must be in similar type size and run parallel to other type.
5	EPA Est. No.	All products	None	Front panel, immediately before or following Reg. No.	May appear on the container instead of the label.
6A	Ingredients statement	All products	Front panel	Immediately following product name	Text must run parallel with other text on the panel.
6B	Pounds/gallon statement	Liquid products where dosage given as lbs. ai/unit area	Front panel	Directly below the main ingredients statement	
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ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
8C	Physical or chemical hazards	All pressurized products, others with flash points under 150°F	None	Same as above	
9A	Restricted block	All restricted products	Top center of front panel	Preferably blocked	Includes a statement of the terms of restriction. The words "RESTRICTED USE PESTICIDE" must be same type size as signal word.
9C	Misuse statement	All products	Immediately following heading of directions for use		
10A	Reentry statement	All cholinesterase inhibitors	In the directions for use	Immediately after misuse statement	
10C	Storage and disposal block	All products	In the directions for use	Immediately before specific directions for use or at the end of directions for use	Must be set apart and clearly distinguishable from from other directions for use.
10D	Directions for use	All products	None	None	May be in metric as well as U.S. units

PHYSICAL-CHEMICAL HAZARDS

Criteria	Required Label Statement
I. Pressurized Containers	
A. Flashpoint at or below 20°F; or if there is a flashback at any valve opening.	Extremely flammable. Contents under pressure. Keep away from fire, sparks, and heated surfaces. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
B. Flashpoint above 20°F and not over 80°F; or if the flame extension is more than 18 inches long at a distance of 6 inches from the valve opening.	Flammable. Contents under pressure. Keep away from heat, sparks, and flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
C. ALL OTHER PRESSURIZED CONTAINERS	Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
II. Non-Pressurized Containers	
A. Flashpoint at or below 20°F.	Extremely flammable. Keep away from fire, sparks, and heated surfaces.
B. Flashpoint above 20°F and not over 80°F.	Flammable. Keep away from heat and open flame.
C. Flashpoint over 80°F and not over 150°F.	Do not use or store near heat and open flame.
D. Flashpoint above 150°F.	None required.

STORAGE AND DISPOSAL INSTRUCTIONS FOR PESTICIDES

All products are required to bear specific label instructions about storage and disposal. Storage and disposal instructions must be grouped together in the directions for use portion of the label under the heading STORAGE AND DISPOSAL. Products intended solely for domestic use need not include the heading "STORAGE AND DISPOSAL." The STORAGE AND DISPOSAL heading must appear in the minimum type size listed below:

Size of label front panel in square inches	Required type size for the heading STORAGE AND DISPOSAL (all capitals)
10 and under	.6 point
Above 10 to 15	.8 point
Above 15 to 30	10 point
Over 30	12 point

Storage and disposal instructions must be set apart and clearly distinguishable from other directions for use. Blocking storage and disposal statements with a solid line is suggested as a means of increasing their prominence.

A. Storage Instructions:

All product labels are required to have appropriate storage instructions. Specific storage instructions are not prescribed. Each registrant must develop his own storage instructions, considering, when applicable, the following factors:

1. Conditions of storage that might alter the composition or usefulness of the pesticide. Examples could be temperature extremes, excessive moisture or humidity, heat, sunlight, friction, or contaminating substances or media.

2. Physical requirements of storage which might adversely affect the container of the product and its ability to continue to function properly. Requirements might include positioning of the container in storage, storage or damage due to stacking, penetration of moisture, and ability to withstand shock or friction.

3. Specifications for handling the pesticide container, including movement of container within the storage area, proper opening and closing procedures (particularly for opened containers), and measures to minimize exposure while opening or closing container.

4. Instructions on what to do if the container is damaged in any way, or if the pesticide is leaking or has been spilled, and precautions to minimize exposure if damage occurs.

5. General precautions concerning locked storage, storage in original container only, and separation of pesticides during storage to prevent cross-contamination of other pesticides, fertilizer, food, and feed.

6. General storage instructions for household products should emphasize storage in original container and placement in locked storage areas.

B. Pesticide Disposal Instructions:

The label of all products, except those intended solely for domestic use, must bear explicit instructions about pesticide disposal. The statements listed below contain the exact wording that must appear on the label of these products:

1. The labels of all products, except domestic use, must contain the statement, "Do not contaminate water, food, or feed by storage or disposal."

2. Except those products intended solely for domestic use, the labels of all products that contain active ingredients appearing on the "Acutely Hazardous" Commercial Pesticide Products List (RCRA "E" List) at the end of this appendix or are assigned to Toxicity Category I on the basis of oral or dermal toxicity, skin or eye irritation potential, or Toxicity Category I or II on the basis of acute inhalation toxicity must bear the following pesticide disposal statement:

   "Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance."

   The labels of all products, except those intended for domestic use, containing active or inert ingredients that appear on the "Toxic" Commercial Pesticide Products List (RCRA "F" List) at the end of this appendix or presently meet any of the criteria in Subpart C, 40 CFR 261 for a hazardous waste must bear the following pesticide disposal statement:

"Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance."

Labels for all other products, except those intended for domestic use, must bear the following pesticide disposal statement:

"Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility."

3. Products intended for domestic use only must bear the following disposal statement: "Securely wrap original container in several layers of newspaper and discard in trash."

C. Container Disposal Instructions

The label of each product must bear container disposal instructions appropriate to the type of container.

1. All products intended for domestic use must bear one of the following container disposal statements:

Container Type	Statement
Non-aerosol products (bottles, cans, jars)	Do not reuse container (bottle, can, jar). Rinse thoroughly before discarding in trash.
Non-aerosol products (bags)	Do not reuse bag. Discard bag in trash.
Aerosol products	Replace cap and discard containers in trash. Do not incinerate or puncture.

2. The labels for all other products must bear container disposal instructions, based on container type, listed below:

Container Type	Statement
Metal containers (non-aerosol)	Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.
Plastic containers	Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.
Glass containers	Triple rinse (or equivalent). Then dispose of in a sanitary landfill or by other approved state and local procedures.
Fiber drums with liners	Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then dispose of liner in a sanitary landfill or by incineration if allowed by state and local authorities. If drum is contaminated and cannot be reused[1], dispose of in the same manner.
Paper and plastic bags	Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.
Compressed gas cylinders	Return empty cylinder for reuse (or similar wording)

1/ Manufacturer may replace this phrase with one indicating whether and how fiber drum may be reused.

Pesticides that are hazardous wastes under 40 CFR 261.33(e) and (f) when discarded.

"Acutely Hazardous" Commercial Pesticides (RCRA "E" List)
Active Ingredients, (no inerts):

Acrolein
Aldicarb
Aldrin
Allyl alcohol
Aluminum phosphide
4-Aminopyridine
Arsenic acid
Arsenic pentoxide
Arsenic trioxide
Calcium cyanide
Carbon disulfide
p-Chloroaniline
Cyanides (soluble cyanide salts, not specified elsewere)
Cyanogen chloride
2-Cyclohexyl-4,6-dinitrophenol
Dieldrin
0,0-Diethyl S-[2-ethylthio)ethyl] phosphorodithioate
(disulfoton, Di-Syston)
0,0-Diethyl 0-pyrazinyl phosphorothioate (Zinophos)
Dimethoate
0,0-Dimethyl 0-p-nitrophenyl phosphorothioate (methyl parathion)
4,6-Dinitro-o-cresol and salts
4,6-Dinitro-o-cyclohexylphenol
2,4 Dinitrophenol
Dinoseb
Endosulfan
Endothall
Endrin
Famphur
Fluoroacetamide
Heptachlor
Hexanethyl tetraphosphate
Hydrocyanic acid
Hydrogen cyanide
Methomyl
alpha-Naphthylthiourea (ANTU)
Nicotine and salts
Octamethylpyrophosphoramide (OMPA, schradan)
Parathion

"Acutely Hazardous" Commercial Pesticides (RCRA "E" List)
Active Ingredients continued:

Phenylmercuric acetate (PMA)
Phorate
Potassium cyanide
Propargyl alcohol
Sodium azide
Sodium cyanide
Sodium fluoroacetate
Strychnine and salts
0,0,0,0-Tetraethyl dithiopyrophosphate (sulfotepp)
Tetraethyl pyrophosphate
Thallium sulfate
Thiofanox
Toxaphene
Warfarin
Zinc phosphide

"Toxic" Commercial Pesticide Products (RCRA "F" List)
Active Ingredients:

Acetone
Acrylonitrile
Amitrole
Benzene
Bis(2-ethylhexyl)pthalate
Cacodylic acid
Carbon tetrachloride
Chloral (hydrate)
Chlordane (technical)
Chlorobenzene
4-Chloro-m-cresol
Chloroform
o-Chlorophenol
4-Chloro-o-toluidine hydrochloride
Creosote
Cresylic acid
Cyclohexane
Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[c,d]-pentalen-2-one
(kepone, chlordecone)
1,2-Dibromo-3-chloropropane (DBCP)
Dibutyl phthalate
S-3,3-(Dichloroallyl diisopropylthiocarbamate (diallate, Avadex)
o-Dichlorobenzene
p-Dichlorobenzene
Dichlorodifluoromethane (Freon 12®)
3,5-Dichloro-N-(1,1-dimethyl-2-propynyl) benzamide (pronamide,Kerb)
Dichloro diphenyl dichloroethane (DDD)
Dichloro diphenyl trichloroethane (DDT)
Dichlorethyl ether
2,4-Dichlorophenoxyacetic, esters and salts (2,4-D)
1,2-Dichloropropane
1,3-Dichloropropane (Telone)
Dimethyl phthalate
Ethyl acetate
Ethyl 4,4'-dichlorobenzilate (chlorobenzilate)
Ethylene dibromide (EDB)
Ethylene dichloride
Ethylene oxide
Formaldehyde
Furfural
Hexachlorobenzene
Hexachlorocyclopentadiene
Hexachloroethane
Hydrofluoric acid

"Toxic" Commercial Pesticide Products (RCRA "F" List)
Active Ingredients:

Isobutyl alcohol
Lead acetate
Lindane
Maleic hydrazide
Mercury
Methyl alcohol
Methyl bromide
Methyl chloride
2,2'-Methylenebis (3,4,6-trichlorophenol) (hexachlorophene)
Methylene chloride
Methyl ethyl ketone
4-Methyl-2-pentanone (methyl isobutyl ketone)
Naphthalene
Nitrobenzene
p-Nitrophenol
Pentachloroethane
Pentachloronitrobenzene (PCNB)
Pentaclorophenol
Phenol
Phosphorodithioic acid, 0,0-diethyl, methyl ester
Propylene dichloride
Pyridine
Resorcinol
Safrole
Selenium disulfide
Silvex
1,2,4,5-Tetrachlorobenzene
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
2,3,4,6-Tetrachlorophenol
Thiram
Toluene
1,1,1-Trichloroethane
Trichloroethylene
Trichloromonofluoromethane (Freon 11®)
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)
Xylene